

INDEX OF SURGICAL PROGRESS.

GENERAL SURGERY.

I. Tetanus Hydrophobicus. By P. KLEMM (Dorpat). The author, in connection with one example of this disease, occurring in the clinic of v. Wahl, has made a complete review of all the cases in literature. On the whole we can distinguish two groups of cases, those having an acute and those having a chronic duration. These cases of traumatic head tetanus resemble an acute infectious disease inasmuch as they have all a period of incubation, the time elapsing between the receipt of the injury and the first manifestation of symptoms. The number of cases collected is twenty-four. From these it is learned that the average period for incubation is eight to nine days. The acute cases have a duration of fourteen to fifteen days. The symptomatic picture presented is quite uniform in all cases. In some cases the disease remains confined to certain nerve districts, in others it takes a wider range. The invasion is in all cases with trismus and facial paralysis. In one case during the whole course of the disease these symptoms persisted without tetanus of the muscles of the trunk or rigidity of the neck. The disease is localized fully to the areas of the trigeminus and facial. The trismus may appear on one side and then involve the opposite side of the face with increased reflex irritability of muscles, or the tensions may remain unilateral. The reflex irritability, especially of the facial muscles and glottis, is very marked in some cases (v. Wahl). In this respect head tetanus (Kopf tetanus) resembles very much cases of hydrophobia. In fact this peculiarity has given this form of traumatic tetanus its name.

Gueterbock ascribes the tetanic spasm of the facial muscles to a paralysis of the facial, but in no case could the author establish a paralysis of the soft palate.

The paralyzed facial muscles in some cases are affected with tonic and chronic spasms. In acute cases, in addition to the above, we may have rigidity of the facial muscles, or the process may spread to the deeper portions of the medulla and cord, giving rigidity of the muscles of the neck opisthotonos with spasms of the extremities. The other cranial nerves remain unaffected. The prognosis in acute cases is bad; only one of sixteen cases thus far recorded has recovered. In the chronic cases there have been six recoveries. In none of these recoveries was the glottic and faucial spasms marked, or the reflex irritability very apparent.

The whole disease is a variety of tetanus traumaticus, and should be classed among the wound infections.

It should be added that in six cases of the twenty-four an examination of the facial nerve gave post mortem negative results.—*DeutschZeitsch f. Chir.*, vol xxix.

II. Clinical and Experimental Observations upon Ether Narcosis. By FRITZ FUETER (Berne). This embraces an interesting series of observations, both clinical and experimental, concerning the value of ether as an anæsthetic. These studies were made in the clinic of Professor Kocher. The enthusiasm shown by the author in favor of ether is all the more interesting from the fact that this anæsthetic is so universally shunned upon the Continent.

The number of narcoses were limited, but the results are apparently uniform and satisfactory. The Juillard mask as modified by Dumont was used. The ether was chemically pure, its specific gravity tested, and its reaction which should be neutral, previously ascertained. The patients were prepared in the same manner as in chloroform narcosis. Author does not lay any stress upon corneal reflexes as a criterion of narcosis. About fifty per cent. of ether is poured upon the mask (in children twenty five per cent), the mask is placed slowly in contact with the face of the patient, the whole mask and head is then covered with a cloth, and muscular relaxation is awaited; this ensues as a rule within two minutes. The mask is not removed during the whole op-

eration except to add ether if the patient should show signs of reaction. The covering of the head with a cloth is to secure an atmosphere of ether vapor. It insures a saving also of the drug, as well as certain rapid narcosis.

This new procedure is worthy of attention. The author does not fear any accidents as a result of reinhalation of gases in the above technique. The author's experience numbers 150 narcoses; these include patients from four months to ninety years of age. The average amount of ether used in the first 50 cases until the appearance of narcosis, was 9.06 c.cm., in 14 cases 100 c.cm. As a rule about 58.6 c.cm. of ether was necessary. The general average time consumed in establishing complete narcosis was 4.8 minutes. The narcoses in children number 33. They give interesting data. As a rule narcosis was established in one minute, at the most in two minutes. Generally speaking, 30 c.cm. of the drug was required to obtain this result. Author could not establish a stage of excitation in these little subjects, nor did he fail as Demme to obtain narcosis in any case.

In a child aged four months it should be noted that the patient was kept under the ether for 43 minutes and 135 ccm. consumed. The patient, though suffering from bronchitis and in poor condition, had no ill effects following narcosis. The ether narcoses in children are the most satisfactory. In those addicted to alcohol the excitement of the first stage was eliminated in two cases of the author by the previous administration of wine in some form. The vomiting following the administration of ether was observed in but few of the author's cases (ten) He has administered ether in emphysema, phthisis, in valvular diseases of the heart, without evil results. The assertion of Gerster as to the danger of broncho-pneumonia in children and old age is not supported by the studies of Dr. Fueter. The author finds that struma compressing the air passages or tumor might be a contraindication to the administration of ether. The vapor of ether is inflammable in the presence of a lamp or taper at a distance of 6 or 7 cm. in the horizontal direction, but beneath the source of the ether the fumes will ignite at a distance of 40 to 50 cm. The thermo cautery, however, may be safely used in the vicinity of the ether, as the instrument must be brought to

close distance, 1 cm., to the source of vapor of ether in order to ignite the same. Ether, on the whole, is a much safer anesthetic than chloroform. The bad results of his colleagues, the author thinks, have followed imperfect technique in administration.

The experimental portion of the above was carried out upon dogs in order to ascertain the action if any of ether upon the kidneys. Author found even after prolonged or repeated administration of ether to dogs that neither was the kidney tissue compromised in any way nor was there temporary albuminuria. The danger of ether administration in cases of moderate Bright's disease is perhaps overestimated by American observers (Emmett, Millard).—*Deutsch Zeitsch f. Chir.*, bd. 29, heft. I.

HENRY KOPLIK (New York).

III. Some Abuses of Etherization. By GEORGE F. SHRADY, M. D. (New York). To avoid abuses in the administration of ether the author advises the observance of the following considerations:

1. In commencing the administration of ether the gradual method is to be preferred.
2. Its employment allows the lungs to empty themselves of residual air, prevents coughing and struggling, and places the organs in the best possible condition to receive and rapidly utilize the ether vapor.
3. After the stage of primary anesthesia is reached, the more pure ether vapor the patient breathes, the better.
4. The shorter the time of anesthesia, and the smaller the amount of ether used, the less likely are the unpleasant sequelæ to occur.
5. The more evenly it is administered the less shock to the patient.
6. Anesthesia should be entrusted to experienced administrators only.
7. Many of the fashionable efforts to resuscitate patients are not only useless but harmful.
8. The minimum amount of force should be employed to restrain the muscular movements of the patient.
9. Mixed narcosis is often advisable for prolonged operations.

10. The utility of the galvanic battery, in threatened death, is to be proven.

11. The most trustworthy means of resuscitating desperate cases are artificial respiration, hypodermic stimulation, inhalation of nitrate of amyl, and inversion of the body.—*New York Medical Record*, February 23, 1889.

IV. Drainage and Drainage Tubes in Their Application to the Treatment of Wounds. By STEPHEN H. WEEKS, M. D. (Portland, Me). The author summarizes his paper as follows: (1) One of the most important duties of the surgeon is to prevent the supuration of wounds and to protect the patient from the dangers of septic absorption. (2) If the blood and serum which collect in the wound within the first twenty-four or forty-eight hours, do not find free exit, they give rise to tension and tension gives rise to inflammation, and the latter, if allowed to go on long enough, to suppuration; and thus the rapid healing of the wounds is prevented and at the same time the elements of putrefaction may be absorbed into the blood and give rise to septic traumatic fever. (3) To avoid these consequences, thorough drainage should be secured for the free escape of disintegrated dead tissue and such other fluids as are not required for repair and which, if left pent up in the wound, not only tend to separate tissues which are intended to unite, but they tend to excite inflammation in the part and ultimately to undergo septic changes which may lead to blood poisoning in the form of septicæmia or pyæmia. (4) When antiseptics are used during operations, or as a dressing whether as a spray or a lotion, the use of the drainage tube is as much or more necessary than it is where other forms of dressing are employed; since under the stimulating influences of these agents, there is more effusion than is to be looked for under other circumstances. (5) There are two methods by which drainage may be secured—drainage through tubes and drainage by capillary. Drainage through tubes is the most universally applicable, and the most certainly successful. (6) The materials which are in common use for drainage tubes are rubber, catgut, horse-hair, glass and decalcified bone. (7) Where it is desirable to use

absorbable drainage tubes those made of arteries present, I believe, advantages not possessed by any other material now in use. (8) When a wound is closed with a view of obtaining primary union, or of converting an open into a subcutaneous wound, careful inspection is called for to guard the patient against danger. If, on the second or third day, there arise pain and tension in the wound, with high temperature and other symptoms of constitutional disturbance, the dressings should be removed and free exit given to pent up blood and serum, since it will be found that these symptoms are due to the retention of irritating fluids of the part, and are susceptible of relief only by the evacuation of such retained fluids.—*American Surgical Association*, 1889.

V. Transplantation of Skin-Flaps by Wolfe's Method.

By FR. VON ESMARCH (Kiel). Refers to a recent inaugural dissertation of Hahn of Kiel in which thirteen cases of this operation in the Kiel Clinic are detailed. These defects were the result in three cases of the existence of cancer of the face, in one of extirpation of *nævus pigmentosum* and in four of rhinoplasty from the forehead; in three cases the flap was taken directly for partial rhinoplasty and in two others for the formation of eyelids. The defects varied from 1 to 5 cm. in diameter, adhesion of the flaps occurring in from five to ten days. Some entirely healed at once and the transplanted flaps differed from the neighboring skin only in retaining for some time a paler color. In most cases there were exfoliation of the cuticle and necrosis of small spots of dermis, but without in the least prejudicing the successful result of the operation. Entire failure only resulted in one case in which the patient's skin was in a most unfavorable condition.

The method has the following advantages: 1. It enables us at once and completely to cover fresh wounds. 2. Skin with cicatricial tissue can be replaced by true skin which offers greater resistance to external deleterious influences. 3. It gives better cosmetic results than any other method of transplantation, and this is especially important in operations on the face.

The only disadvantage which this method has is that the flap is

liable to subsequent shrinking, but this can be obviated by making it larger than is necessary, to provide for shrinkage. The method is particularly applicable to plastic operations and cases in which we have to deal in the face with large wound surfaces incapable of being closed with sutures.—*Lancet*, June 8, 1889.

JAMES E. PILCHER (U. S. Army).

NERVOUS AND VASCULAR.

I. On Nerve Extraction with Demonstration of Instruments and Removed Nerves. By C. THIERSCH (Leipsic). By nerve extraction is meant a procedure which, without an extensive preparatory elevation, allows a nerve seized at the periphery to be torn off centrally. The method is not unalterably established although Thiersch has been at work at it for six years. Still it seemed to him well to place the matter though incomplete before the profession for trial. As doubtless almost every one so he has now and then made an attempt after resecting a nerve to tear off a further piece from the central end—but only exceptionally with success. Usually the forceps allow the nerve to slip through, or simply bite off the part seized.

The procedure, which has so far proven best, is as follows, taking the infraorbital nerve as an example: The nerve is thoroughly exposed at the infraorbital foramen so that none of the diverging branches can be overlooked. The forceps¹ is pushed with one branch against the foramen transversely beneath the collective branches and closed. You now begin to turn, with the left nerve from left to right, so that it shall not be stretched across the upper edge of the foramen and thus severed. Twist slowly, about half a turn a second. By this twisting the peripheral part to its finest branches follows the strain, the central part which cannot follow does not always tear at the same point though usually $3\frac{1}{2}$ to 4 cm. from the foramen. The break occurs before the peripheral portion is completely drawn out. The operation may now be ended by severing the peripheral portion at the forceps, but it can

¹Resembles Lister's forceps though stronger and firmer at the joint. One arm is convex, the other hollow, both provided with transverse interfitting smooth ridges. The tip of the forceps is somewhat buttonshaped to keep the nerve from slipping off. To be had of instrument maker Moecke, Leipzig.

do no harm to twist this out and thus prevent any possibility of new nerves growing into the old paths.¹

He had hoped that the branches between the points of seizure and of rupture would also be obtained—in the case of the infraorbital, the anterior and even the posterior dental nerves. This, however, does not happen. Only the seized nerves are extracted, many times it is true to a very considerable length. In one experiment on the cadaver, *e. g.*, fibers from the lingual nerve were obtained that extended at least one cm. beyond the Gasserian ganglion.

He has also attempted by a previous twisting of the nerve longitudinally to so firmly unite the superior efferent twigs with the trunk that they would follow the strain. But the instruments devised for this purpose proved futile. They were partly forceps closing at the end with a horizontal ring (two half rings), partly corkscrew-like instruments for receiving the ring into their spiral. Both instruments seized the nerve longitudinally, but when turning on the long axis it was stretched so tightly over one or the other edge of the instrument as to be bitten through. Consequently for the present he sticks to the cross-seizing forceps. Still the pull exerted does not seem without effect on the remaining twigs. In experiments on the cadaver the predental nerve was found much loosened and tortuous in the orbita; and in the cases combined with odontalgia, the dental pain ceased; still this is not decisive, as the like happens in ordinary resection of the infraorbital whereby the predental nerve is not touched.

With the supraorbital nerve it will be well to expose the inner half of the upper orbital margin, to pick out each nerve curving around the edge, and to follow them, say 1 cm. into the orbit, since variations are not rare. He gives one case in point. The lingual and inframaxillary nerve he exposes by the method of Sonnenburg-Lücke, though making the incisions somewhat more extensive. One might go back to the method of Jul. Kühn, only then the angle of the jaw ought not

¹To free the nerve from the forceps place the whole under water and brush the folds slowly back. When the nerve is unrolled, by gradually substituting alcohol for water and getting the branches in proper position a good and permanent preparation is obtained.

to be sawed off and removed, but sawed into and osteoplastically turned back.

All the trigeminus tracks that are the seat of neuralgia can not be directly reached from the place specified. He hopes however that by indirect action in many cases opening down to the foramen ovale and rotundum can be avoided. He has repeatedly followed this path to the base of the skull, but can not agree with those who claim that this provisional operation is easily executed and free from hazard; he finds it tedious and not immaterial as regards later function of the masticatory apparatus.

He does not lay much weight on the short nerves that branch off from the third division close to the base and break up in the buccinators, since these scarcely carry more than a few sensory fibers. On the other hand the auriculo-temporal nerve likewise branching off close to the base proved the permanent seat of neuralgia in two cases in which pain in the territory of the supraorbital, infraorbital, lingual and infra-maxillary had been subdued. This nerve he believes might be exposed between the tragus and the maxillary condyle for the purpose of extraction, at the point mentioned by Richet for its discission. The mylohyoid nerve can be seized together with the inframaxillary, and the buccinator where it becomes superficial at the anterior border of the masseter muscle. The terminal branches of the orbital nerve in the cheek and temple are difficultly accessible without penetrating deeply; likewise the ethmoidal nerve. His experiments were not finished.

Extraction does not offer any disadvantages, though he would not conceal the fact that sometimes fine nerve-strips from the facial were found attached by connective tissue to the end fibers of the infraorbital. In these cases a slight paresis, lasting eight to fourteen days, appeared in the corresponding facial region.

Nerve extraction was practiced twenty-four times on the trigeminus (in thirteen persons), five times on the supraorbital, twelve times on the infraorbital, three times on the lingual, four times on the inframaxillary, one time on the mental, besides once each on the post auricular, the dorsalis pedis and the anterior tibial. Also once on the eighth intercostal by assistant Dr. A. Schmidt.

The result was favorable and permanent in the operations on the trigeminus with exception of two cases in which the neuralgia continued in the auriculo-temporal, in one of them also in the region of the orbital.

In one severe case of convulsive tic, although it did not present the characteristics of a reflex neurosis, he formed a plan of excluding or at least weakening sensory irritation by successive extraction of the trigeminal branches; complete and permanent cure, however, resulted from extraction of the infraorbital.

In the discussion he stated that he had repeatedly resected at the foramen rotundum and ovale according to Krönlein, but considered the operation very difficult and often followed by later disturbances.—*xviii Germ. Surg. Congr.*, Author's report in *Centbl. f. Chirg.*, No. 29, 1889.

WILLIAM BROWNING (Brooklyn).

II. Acute Spasmodic Pain in the Left Lower Extremity Relieved by Subdural Division of the Posterior Roots of Certain Spinal Nerves. By W. H. BENNETT (London). A man, æt. 45 years, suffered from acute pain, sometimes spasmodic, in the left leg, apparently due to syphilitic thickening of the tibia of nine years duration. It had been treated ineffectually with iodide of potassium, mercury, anodynes and narcotics; with trephining and linear osteotomy of the thickened tibia; amputation through the knee-joint, stretching and finally resection of two and a half inches of the sciatic nerve. Death being clearly imminent, it was resolved to explore the spinal canal and examine the membrane and the cord itself, to see if any causative lesion could be discovered. No lesion being found, the posterior roots of the first, third, fourth and fifth lumbar and the first and second sacral nerves were divided. Healing progressed within the wound, but owing to the exhausted condition of the patient, death ensued in ten days. During this time the spasms continued but were painless. Autopsy showed that reunion had occurred between the ends of the divided nerve roots, although the sensation had returned with a rapidity much in excess to what is commonly seen under similar con-

ditions after division of a nerve trunk. It was believed that a complete recovery would have been obtained had the treatment been adopted before the patient became exhausted.—*Lancet*, April 27, 1889.

III. Successful Almost Simultaneous Ligature of the Primitive Carotid Arteries. By L. C. LANE, M. D., (San Francisco). A man, æt. 40 years, was affected with an epithelial cancer of the base of the tongue of several months duration. The extirpation of the growth was commenced by ligation of the right common carotid to obviate the probable hemorrhage from the branches. The tongue was then drawn forward and the diseased structures circumscribed with a shallow cut, including half of the base of the tongue, the lateral wall of the throat, including the right tonsil and half of the soft palate. The left internal carotid artery was wounded by the completion of this cut and tamponing having failed to check the hemorrhage, the left common carotid was ligatured, about an hour having elapsed since the right was tied. This did not entirely arrest the bleeding and it was necessary to keep a plug in the wound for several days thereafter. The growth was satisfactorily removed and the patient made a good recovery, no recurrence having occurred eighteen months later.—*American Surgical Association*, 1889.

JAMES E. PILCHER (U. S. Army)

HEAD AND NECK.

I. Trephining for Tumor of the Brain. By H. FISCHER (Breslau). A powerful man, (horse-car conductor), æt. 37 years, was admitted to the surgical ward June 2, 1888. No specific history. Quite well up to January, 1887. His trouble began with a severe attack of dizziness, that finally passed into an epileptic fit, the whole following great bodily activity (dancing to lively airs). The next day there was a repetition. From that on, the right arm remained weak, and sensation in it had become numbed. He was, however, able to remain at his troublesome post. In the fall of 1887 the arm became completely paralyzed and very severe paroxysmal headache appeared on the left.

From then on he was in the care of the general medical ward where

the diagnosis of tumor in the left precentral convolution was made. Iodide of potash and other remedies proved entirely ineffectual. The symptoms slowly and continually increased. On the 2d of June slight aphasia (motor) existed. Consciousness was unclouded. No paralysis about the face. The right arm was decidedly paralyzed in all groups of muscles,—flexors, extensors, supinators and pronators about equally. All qualities of sensation diminished (in arm). The right leg was weaker than the left and dragged a little in walking. Operation of trephining June 4th. By the rules laid down by Horsley the precentral convolution was readily found. Still, examined in every way no trace of a tumor could be found. He thereupon tamponed with iodoform gauze without replacing the button of bone. The patient experienced great relief from the operation. Though the motor speech trouble had increased, the headache was gone, the arm-paralysis was less, and the convulsions ceased. The end of November he began to complain again. The paralysis of the right arm and leg increased. Characteristic epileptiform convulsions, as described by Jackson, occurred almost daily, and the disturbance in speech became more evident. During the severe attacks the patient complained of a stopping of the left nostril, and finally in these lost consciousness. As the first operation had given him great relief, he urged its repetition. On Dec. 20th the skull was opened at the point of previous operation. Upon penetrating the brain substance a red lobulated wedge-shaped tumor soon bulged up. Its base reached far into the brain mass towards the right (beyond the trephine opening). He succeeded with his fingers in shelling out the tumor from the brain, although it continually broke off on pulling. Hence it had to be removed piece-meal, and severe hæmorrhage resulted. The growth was also firmly adherent to the dura. After the operation the hole in the brain was plugged with iodoform gauze, and a lightly compressing bandage applied. The patient was at first rather weak but soon recovered, and all manifestations were disappearing. Two months later, however, he began to complain again, and now a tumor grew out through the trephine-opening. No further operation was undertaken and he died comatose March 25. The autopsy showed that the tumor in the brain had been completely removed. The

recurrence started from the dura. It was a vascular round-celled sarcoma. We see from the history of this operation how slippery and uncertain for operative interference is the subject of brain-tumor. This one was correctly diagnosticated and yet not found the first time, since it had pressed laterally on the central convolutions.—*xviii Germ. Surg. Congr.*, Author's report in *Centbl. f. Chirg.*, No 29, 1889.

II. Three Cases in Which a Favorable Result was Obtained by Trephining. By DR. HOFMAN (Königsberg).

CASE I. Man, æt. 32 years. Healthy, from healthy family and the father of several healthy children. No history of syphilis. In August, 1886, he noticed that distant objects looked double. At the same time vertigo and headache came on, especially on stooping. Then gradually a feeling of numbness over the whole right side of the face, a slowly increasing stiffness of this side and difficulty in speaking were added. After catching cold six weeks later, excessive pain in the head and vomiting. Dec. 1 the author found paresis in the region of the right facial, abducens, oculomotor, hypoglossus and glossopharyngeus, besides the above noted symptoms. As the author had seen similar phenomena develop acutely from purulent otitis, and the patient was hard of hearing on the affected side (although since childhood, and a perforation of the drum also existed) he thought it might be an inflammatory process proceeding therefrom. Hence on Oct. 5, 1886, he trephined the mastoid process down to the lateral sinus, also opening the latter. All that he found was sclerosed bone, somewhat thickened dura, and strikingly dark blood from the sinus. Immediately after the operation the headache vanished and in the course of the succeeding months all symptoms passed away. The man has since remained perfectly healthy.

CASE II. Vigorous man, æt. 19 years. In August, 1888, after a horseback-ride he suffered an apoplectic attack with loss of consciousness for four days. Thereafter complaint of severe headache located at the vertex, sensation of lameness in lower extremities, feeling of coldness up to the knee, tottering gait, vertigo, severe pain in the back—suicidal impulses. As in the previous case iodide was tried in vain.

As an exact examination showed that the headache always began on right side, and that the patient had a former otitic trouble on this side. An operation like the previous one was done on this side three months from the commencement of the trouble. Immediate relief of the headache and gradual subsidence of the symptoms. Here also the bone was sclerotic, the dura somewhat thickened.

CASE III. A 30 year old referee. No evidence of syphilis. Always healthy except a sciatica two years previously. Attacked March 10, 1889, with severe headache, vomiting, very slow pulse (36-40), seeing sparks, feeling of general lassitude—without increase in temperature. Iodide produced transitory improvement. Then for several successive days repeated epileptiform attacks with subsequent confusion (mental), excessive headache and tendency to much weeping. One night slight pain in the left upper extremity complained of; the next night the left side became hemiplegic—also paralysis of the bladder. The same day (March 21, 1889,) he operated in the same way as in the previous cases. That evening the patient moved the paralyzed limbs. On the following days consciousness gradually returned and headache with other symptoms slowly disappeared.

The author is not able to give an explanation of the result. He assumes that such an operation acts similarly to an iridectomy for glaucoma. He proposes to attempt the same in chronic hydrocephalus, and should it succeed there, to proceed similarly in those psychoses in which according to experience no anatomical changes are found. Perhaps the operation might be used as a palliative means to lessen pressure-symptoms in tumors. Whether opening the sinus is necessary further experience must show.—xviii, *Germ. Surg. Congr.*, Author's report in *Centbl. f. Chirg.*, No. 29, 1889.

WILLIAM BROWNING (Brooklyn).

III. Non-Malignant Tumors of the Tongue. By E. KIRCHHOFF (Berlin). The author reports two cases of benign tumors of the tongue, which were operated upon at Bergmann's clinic.

These cases are interesting on account of their rarity and of their importance in matters of differential diagnosis. Both tumors occurred in adults, and were, one a lipoma, the other a fibroma.

These new growths usually develop slowly, and do not cause any trouble until they attain sufficient size to interfere with eating, breathing and speaking.

The favorite seat of the lipoma is on the borders of the tongue, usually near its point, while fibroma occurs more frequently on the dorsum, sometimes more than one being present.

Lipomata of the tongue have been divided into a submucous and an interstitial form. The forms are usually easily recognized, the tense mucous membrane transmitting the golden yellow color of the fatty tissue. In the interstitial form the diagnosis may be more difficult, and this applies as well to fibroma. They must be differentiated from inflammatory processes, and other growths, malignant, syphilitic etc. Various degenerative processes which have been observed, by some authors, in lingual fibromata, appear to be of syphilitic character. There is also a fibro-lipoma of the tongue, in which more or less connective tissue exists, mingled with adipose tissue.

Papilloma occurs with the same frequency on the tongue as the the above named tumors. It is found either as a diffuse villous hypertrophy or as a circumscribed pedunculated warty tumor. The latter form is observed especially in places on which papilla are normally present as the base of the tongue, but this form has been observed on the lower surface of the organ. These tumors may be found at all times of life and are frequently congenital.

Cases of chondroma and osteoma of the tongue have been described, but they are all samples of fibroma or lipomata, which have undergone partial osseous or cartilaginous degeneration.

Keloid and adenoma of the tongue are extremely rare.

As regards vascular tumors we must distinguish between those which are produced by dilatation of the blood vessels, and those which are caused by dilated lymphatics. To the latter belong some forms of macro glossus. The true vascular growths consist of telangiectases, which may involve a large area of the tongue, and cavernous angioma which are usually of small size. The angiomata occur singly or in large numbers, and their favorite seat is the anterior portion of the dorsum linguae. They are only slightly elevated over the surface, and

are of a bluish color, soft in consistence, and their contents can be easily expressed. They grow slowly and may give rise to no inconvenience at first, but soon become the source of frequent hæmorrhage. Small aneurisms are also found in the tongue; they give the characteristic signs and are of reddish or bluish color.

Cystic tumors are of rare occurrence in the tongue itself, although quite frequent in the muscles between the chin and tongue. The most frequent forms are mucous cysts which are usually situated at the base of the tongue in the mucous membrane, and beneath the muscular layer. They grow slowly, have clear contents, and are usually of small size.

Cysticerci and echinococci occur as round tumors, often of considerable size, and are situated, as a rule, in the median portion of the tongue. They commence as small hard nodules, and later assume a cystic character.—*Deutsche Med. Woch.*, No. 23, 1889.

IV. Carcinoma of the Tongue, its Operative Treatment.

By F. KRAUSE, (Halle). The writer reports statistics derived from all cases of carcinoma of the tongue operated on at Professor Volkmann's clinic in Halle between the years of 1875 and 1888, and of the 91 cases operated on there is only a mortality of 22% due to the operation.

In no case has there been any phlegmonous inflammation of the deep cellular tissues of the neck.

As regards the technique of the operation, Volkmann has completely abandoned the ligation of the lingual artery as the first step in the operation, for even when the linguals are tied the hemorrhage is much greater than by the method he now employs.

Tamponing of the trachea is also condemned as dangerous, for in Volkmann's opinion tracheotomy is not so harmless a procedure as it is generally supposed.

Two methods of operation are employed in the clinic at Halle, according to the position, size and extent of the carcinoma.

If the tumor can be drawn as far forward as the teeth, by means of a hook or fillet, the new growth is simply removed with the knife and scissors. (Under these circumstances there is no danger of the blood

entering the larynx; the patient deeply narcotised, is seated upon a chair during the whole course of the operation.) The hæmorrhage being arrested, the wound is united, or if only a small piece of the healthy side of the tongue is left, this is turned back and united to the stump, leaving the patient with a shorter but broader tongue.

In cases where the tumor is too far back to be drawn out sufficiently or if the disease has invaded the floor of the mouth, the palate or tonsils, Volkmann employs Langenbeck's procedure of lateral section of the lower jaw. The patient is chloroformed in a half sitting posture, and the tongue is drawn forward by means of a loop or tenaculum. The canine and first molar teeth are then extracted, if needed, and a vertical incision is made from the angle of the mouth down to the larynx, cutting through to the periosteum of the jaw, above, but below only dividing the skin. The periosteum is then removed from the inferior maxilla and the bone sawed through with a flat saw. Then both parts of the bone are strongly pulled apart, and all the soft parts of the floor of the mouth are then cut in the line of the first incision. This affords ample space to remove any of the infiltrated glands which may be present, and for ligation of any bleeding point. The anterior palatine arch is always cut through and a drainage tube is introduced into the nich of the tonsil and brought out externally and terminates about the level of the larynx, thus preventing the secretions and fluids from gaining access to the trachea.

After removal of the diseased part, the tongue is sutured, and the whole wound closed by the sutures if possible; if not, iodoform gauze tamponade is employed. The edges of the bone are united by a silver wire suture. As regards the after treatment, the patient is placed in a semi-reclining posture, and is fed by fluids which are poured into the back of the mouth by means of a vessel with a long neck.

The majority of patients operated on are able to swallow even a few hours after the operation, or at the latest on the following day.

After each meal the mouth is washed out with some harmless antiseptic solution, usually boric acid.

This mode of operation is, according to the writer, satisfactory in every respect, and it affords a large field for operation and is attended

with only slight hæmorrhage. During the operation the flow of blood into the trachea is absolutely prevented since the epiglottis is always in sight, and is situated on a higher level than the wound.

The secretions from the mouth and wound are afforded a free exit through the drainage tube.

The mortality after such an extensive and radical operation is not very high, only 2 deaths in 35 cases.

In 56 partial extirpations of the tongue, done between 1875 and 1888, there were no deaths.—*Deutsche Med. Woch.*, No. 22, 1889.

F. C. HUSSON (New York).

V. Extirpation of Goitre. By PROF. CASELLI (Genoa). Up to date, the author had done seventy-eight extirpations of goitre, with but one case in which complications occurred. Out of this number he thought he had extirpated the thyroid gland entirely in fourteen cases; he said he thought he had done so, for during the operation, amidst the blood and numerous ligatures, one cannot positively state that some of the degenerated gland might not have been left in the wound. The latter accident is sometimes a happy occurrence for the patient, for the function of the part left preserves the patient from the grave general accidents which are often consecutive to a complete extirpation.

In one case, he operated upon a woman who presented an enormous tri-lobed goitre; he first extirpated the right and median lobes of the tumor. One year later, he extirpated the remnant of the goitre, the left lobe; seven days later the patient presented already very severe symptoms of the goitre cachexia; the urine was albuminous, and the number of blood globules had fallen to 2,900,000 in a cubic millimeter. These symptoms, however, became less marked; seventeen days later the number of blood globules had risen to 3,600,000, and this favorable change was explained when simultaneously a small tumor appeared in the crico-thyroid space, formed by a fragment of the gland which had escaped extirpation, and the consecutive development of this saved the patient from a fatal cachexia.

As regards the consecutive general phenomena, he thinks that a to-

tal extirpation of the thyroid body is much more serious if it is practiced on young persons. It seems that the importance of the thyroid body in reference to the functions of the organism diminishes with increase of years. The nature of the tumor must also be taken into consideration. The tumors which have brought about a complete abolition of the physiological function of the thyroid body can be extirpated without any fear of subsequent bad results; but if one has to deal with young persons, to whom the thyroid body is necessary, it would be useful to leave in place a certain portion of the gland.

Bruns and Kocher attribute the alterations of the tracheal and laryngeal cartilages, which are met with in goitre, to a fault of nutrition, due to a compression of the inferior thyroid artery. He himself thinks that these alterations are due to the direct compression of the tumor, for these alterations disappear when the goitre is extirpated.

Dr. Bassini, of Padua, said that in 1884 he extirpated a large goitre in the case of a young woman, who, after the operation, was seized with symptoms of the cachexia strumipriva; but these symptoms soon disappeared. At the same time, there appeared on the sides of the neck, in the supraclavicular fossæ, little tumors, which brought about the complete cure of the patient. Three of these nodules he extirpated for microscopical examination; they were thyroid adenomas, which convinced him that the tumor which developed in the neck of the patient was of a thyroid origin.—*Med. and Surg. Reporter*, June 1, 1889.

VI. Total Extirpation of the Larynx for Epithelioma.

By Dr. GREVILLE MACDONALD (London) and Mr. CHARTERIS SYMONDS (London). A man, æt. 41 years, presented an epitheliomatous growth affecting the larynx. The case had been followed for some time by Dr. Macdonald and operation had been repeatedly urged until, six months later, the growth had developed so rapidly that laryngectomy was finally agreed to and the operation was done by Mr. Symonds. The growth was found to involve the whole of the left cord while the anterior part of the right looked granular and swollen. The affected portions were removed and the patient recovered rapidly and did well,

but recurrence occurred rapidly and seven weeks later the remainder of the larynx was removed. In ten days his patient was up and around and in a few months he could speak in a low, distinct, though gruff voice; this was managed by passing through the upper wall of the canula a curved tube which ran up to the base of the epiglottis and admitted the air when he closed the canula with his finger. The vibrating structure appeared to be the mucous membrane of the pharynx running back from the epiglottis. The authors thought this was the first recorded case where the patient could speak after total extirpation of the larynx. The patient preferred the laryngeal arrangement referred to, to the artificial larynx, which he had tried.—*Lancet*.

JAMES E. PILCHER (U. S. Army).

CHEST AND ABDOMEN.

I. **Cholecystotomy.** By KENDAL FRANKS (Dublin). The patient, a lady, aged 52, had suffered from biliary colic, accompanied by severe feverish attacks and jaundice, from December 26, 1886. After her admission into hospital the attacks of pain and fever were almost of daily occurrence. The diagnosis was rendered difficult owing to a tumor which occupied the left side, from the costal arch to the crest of the ilium. A smaller globular tumor was felt between this and the umbilicus during the attacks of pain. The patient was in an emaciated and exhausted condition when the operation was performed. The larger tumor on the right side proved to be an abnormally shaped right lobe of the liver, the long axis of which was quite vertical in direction. The gall bladder contained four calculi, which were removed through an incision in its anterior wall. No stone or tumor could be found obstructing the cystic duct or the ductus communis choledochus. It was evident that the obstruction was due to a stricture of the common bile-duct. The opening in the gall-bladder was sutured to the abdominal wound. The patient made a rapid recovery, and when seen nine months later she had gained in weight, and looked healthy and well. She suffered no pain or distress, but the bile continued to flow from the fistula in the side. The absence of bile from the intestines seemed to interfere in no way with her health.—*Brit. Med. Jour.*, Jan. 5, 1889.

II. Cholecystotomy. By MR. BARTON (London). The patient was an elderly woman, who had suffered from symptoms of gall-stones for many years. She was a good deal emaciated, and her nutrition had suffered from long-continued disease. She was heavily jaundiced, and the abdomen, on palpation, showed a well marked tumor in the region of the gall-bladder. The operation was perpendicular to the costal cartilages, about four inches in length, and the peritoneum was readily reached and opened. He passed his finger into the gall-bladder, and felt through the walls a number of hard gall-stones, some being impacted in the common duct. The anterior wall of the bladder was stitched to the edge of the incision. The lower part close to the gall-bladder having been opened, a large gush of greenish-yellow bile followed, and he removed with his finger three large stones. But the real difficulty was to reach the stone or stones impacted in the duct, which constituted the cause of the obstruction. Squeezing or pressing was out of the question, and the only course was to reach the stone or stones with the finger or the forceps. Once the stone had passed through the duct it was exceedingly difficult to reach or press it in any way so as to make it slip backward. After manipulation he extracted another stone, and concluded that his operation had been successful; but it was not, although the wound was antiseptically dressed, and there was an excellent recovery. There was no peritonitis except in gluing the edges together, and there was no bad result. At the same time there was no relief to the jaundice, and the obstruction remained. The dressings were saturated with bile. She expressed herself greatly relieved, and her appetite increased; but being an elderly woman, she never fully regained strength from the low state of nutrition into which she had fallen, and in the course of three months she died, apparently from want of nutrition.—*Brit. Med. Jour.*, Jan. 5, 1889.

III. On the Cystic Liver Echinococcus and the Method of its Operation Introduced by von Volkmann. By F. KRAUSE (Halle). This paper, by Volkmann's first assistant, finally aims at a defense of the double operation against the single one of Sanger-Lindemann, both, however, products of the antiseptic period,

The sources (dog, possibly also fox,) and manner of infection, etc., are first given somewhat in detail. He then relates the thirteen cases so far operated on in Volkmann's clinic by this method, thus including the two originally published by Ranke (1877) and some in a later dissertation. One of these, reaching the liver through the pleural cavity, was, however, a single-act operation. There was only one death, and this was from uræmia 18 days after the operation. He collects also 18 other cases, making a total of 31, without a death from the operation. His list, however, does not seem to be by any means complete. Lindmann's method, up to 1888, gave a death rate of $6\frac{1}{2}\%$, but, as he says, either method gives excellent results compared to the old double puncture of Simon, with its $33\frac{1}{3}\%$ of fatal cases. He finishes with a careful re-description of the one-act operation, but as its principles are already known, we do not need to reproduce it here. He urges against the exploratory aspiration until after the first act, *i.e.*, until adhesions to the border of the incision have formed.—*Volkmann's Sammlung*, No. 325, Nov. 28, 1888.

WM. BROWNING (Brooklyn).

IV. The Operative Treatment of Cicatricial Stenosis of the Pylorus. By Dr. P. ORTMANN (Königsberg). For the surgical treatment of cicatricial stenosis of the pylorus there are at present three operative procedures:

1. Typical resection of the pylorus.
2. Gastro-enterostomy (Wolfler's operation).
3. Pyloro-plasty (Heinecke Mikulicz), which has been done in all but four times.

The question of which operation is to be chosen cannot be answered with certainty before the abdomen is opened.

The least difficult and most rapid operation is that of pyloroplasty, which removes the obstruction and completely restores the physiological relations of the stomach, especially where there are many adhesions and extreme rigidity of the pylorus.

The most radical and also the most dangerous operation is complete resection of the pylorus, which was first done for cicatricial

stenosis by Rydyger. It is especially useful in those cases where the exact differential diagnosis between stenosing ulcer with hyperplasia and carcinoma cannot be made.

Gastro-enterostomy does not directly do away with the pyloric stenosis; it only establishes in a round-about manner the communication between the stomach and the intestine, and answers in those cases, where neither of the above mentioned operations can be employed.

Dr. Ortmann publishes two cases of stenosis of the pylorus, due to different causes, and operated on by Mikulicz; in one case a resection and in the other a pyloroplasty was done.

Case 1. Stenosing ulcer of the pylorus, resection. Woman 40 years old, married 13 years, was admitted to the clinic May 11, 1888, complaining of stomach symptoms which had lasted for several months; vomiting pain and feeling of weight after meals. For the last ten weeks patient complained of a localized pain in the right side of the abdomen, and noticed a hard tumor in the painful region, and a rapid loss of flesh.

Examination showed a little above and to the right of the umbilicus a hard sausage-shaped tumor about 10 cm. long. This tumor is movable but painful. Distention of the stomach shows it to be much dilated, its lower curvature being a hand's breadth below the umbilicus. The tumor is connected with the stomach and occupies the position of the pylorus. Examination of the contents of the stomach shows sarcinae and bacteria; chemical examination with the phloroglucin vaseline solution shows absence of free hydrochloric acid.

Urine clear; no albumen; bowels much constipated. Rydygier's operation of resection of the pylorus was done May 17, and occupied one and one half hours.

The resected portion of the stomach, together with the pylorus, measured 9 cm. for the greater curvature, and 7 cm. for the lesser. The part of the pylorus occupied by the tumor is so narrow that it will hardly admit the point of small dressing forceps. On section of the tumor, the tissue breaks under the knife. The serous coat is glistening; the muscular coat is extremely hypertrophied, and is crossed by white cicatricial connective tissue. The mucous membrane

is also hypertrophied, and at 2 cm. from the pylorus is a defect the size of a silver quarter, with hardened edges and a finely granular base. The ulcer extends deeply into the muscular coat. Incision of the ulcer shows its base and walls to be of a cicatricial consistence.

Microscopical examination of the ulcer and its neighboring parts, together with sections through the tumor, shows nothing of a carcinomatous appearance. At 2 mm. from the edges of the ulcer the mucous membrane is perfectly normal.


The patient recovered perfectly from the effects of the operation, and left the hospital one month later. When seen again, six months later, she was found to be in perfect health, having increased in weight, and being able to eat and digest every article of food without pain or inconvenience of any sort.

Case 2. Female, aged 23; domestic; admitted to the hospital June 11, 1888. Patient had been suffering from stomach symptoms for six years. At that time she drank a teaspoonful of concentrated sulphuric acid. Immediately after she had severe pains which lasted for ten days, and at the same time she vomited blood. For a month after the patient had to remain in bed, suffering from constant pain in the region of the stomach, and vomiting after every attempt at taking food; then she improved, but found she could not swallow solids. Bougies were passed daily for four months, then solid food could be swallowed, but regularly after each meal pain and vomiting set in. Stomach was then washed out, at first twice a week, then daily. For the last three years patient washes out the stomach every morning.

Examination shows no scars in the mouth; the œsophagus is of normal caliber. The abdomen feels normal; around the umbilicus there is a slight swelling, and palpation of the abdomen here gives a splashing sound; otherwise nothing. On distending the stomach it was found to be much dilated. In the contents of the stomach free hydrochloric acid was found.

Operation of pyloroplasty June 25, 1888. An incision 10 cm. long made in the linea alba, above the umbilicus. The exploring finger found pylorus free from adhesions, and the pyloric region was drawn

forward as far as possible; an exploratory incision was then made in the stomach, and the finger being introduced, a ring-like structure at the pylorus was found, so narrow that the tip of the little finger could not pass through it. The incision was then enlarged in the direction of the long axis of the stomach, up to the point of stricture, and then through this point into the duodenum. This showed a strong circular valve-like cicatrix of the mucous membrane as the cause of the stenosis.

The other coats of the stomach were perfectly normal. The wound was then closed in such a manner that the longitudinal incision became transverse, with this modification, that in the pyloric region the wound was closed in a transverse direction, while a small part of the incision going towards the cardia was united longitudinally, so the wound had a  shape, the vertical part corresponding to the seat of the stricture, and the longitudinal part going from thence in the direction of the long axis of the stomach to the beginning of the first exploratory incision. Three rows of silk sutures were made. The abdominal incision was united by three wire and a continuous cat-gut suture.

The patient made a good recovery. During the first two days after the operation the patient vomited several times and complained of some pain, but this passed away.

On the 25th day of July the patient was discharged; a tube having been passed into the stomach that morning, it was found perfectly empty.

Six months after the operation the patient writes that she feels perfectly well and has increased in health, and has not vomited once.

The operation of pyloroplasty has so far been done four times, including this case. The first time by Heinecke in 1886; second time by Mikulicz in 1887; then by Bardleben early in 1888, and then again the last time by Mikulicz. There has only been one death, and that was Mikulicz' first case. The functional results in the three successful cases have been excellent.—*Deut. Med. Woch.*, No. 9, Feb. 28, 1889.

F. C. HUSSON, (New York.)

V. A Method of Operation Intended to Diminish the Dangers of Resection of the Intestine. By DR. E. HAHN (Berlin). The unfortunate results following the treatment of gangrenous intestine by means of primary resection of the intestine and the establishing of an artificial anus, impelled Hahn to employ the following method: The gangrenous intestine is drawn out through the inguinal ring, a double ligature is applied and the gangrenous portion resected between the two portions of the latter. Iodoform gauze is packed into the previously disinfected lumen of the bowel, which is then sutured. An incision is then made of from 6 to 8 cm. in length, in the linea alba, crossing the origin of the mesentery, so that the upper portion of the incision is above, and the other portion is below the point of crossing of the latter. For this purpose the incision is begun somewhat below the umbilicus, and ends closely above an imaginary line passing from one anterior superior spinous process to that of the opposite side. The abdominal cavity is opened to this extent, and both ends of the intestine drawn out of the abdominal wound at the linea alba. This is accomplished by means of a pair of dressing forceps, which grasp the ends of the bowel by means of the double ligature threads before mentioned. The wound in the hernial region is irrigated and tamponed with iodoform gauze. Thereupon the exact condition of the intestine is determined, and, if no further resection is necessary, the sutures are applied in the usual manner (circular suture). Strips of iodoform gauze are placed under the line of sutures, so that the bowel, so to speak, rides upon the same; or from both sides of the bowel, strips of the same material are led to the mesentery. The latter method is preferred in as much as they are more easily removed. Then the bowel and gauze are lowered into the abdominal cavity, and the ends of the strips led out through the abdominal wound, and are fastened in the latter, whereby the bowel is secured to the neighborhood of the abdominal wound. Between the strips the abdominal wound is still further packed with iodoform gauze and the skin of the abdomen united over all by means of about three superficial sutures.—*Berl. Klin. Wochenschrift*, No. 26, 1888.

VI. Upon Enterostomy and Laparotomy in Acute Internal Intestinal Obstruction Caused by Volvulus, Strangulation and Flexion. By R. V. OETTINGEN (Dorpat). Comparison is made between cases in which simple laparotomy is alone necessary and those in which the performance of enterostomy in addition is demanded. In judging of that which enterostomy can accomplish, he includes the palliative effect of the operation; the life being preserved, but the occlusion persisting. On the other hand, he considers with due appreciation those cases in which, from an anatomical and pathological view, laparotomy was successful, but the clinical result is not taken into account.

In the whole literature of this subject, it is asserted, that not a single case of volvulus is recorded in which a cure of the volvulus was obtained by the performance of an enterostomy. All so treated (five cases) were followed by death. The argument that in cases of volvulus, after the disappearance of the latter, the fact that it had existed cannot be subsequently demonstrated is disputed by the author; it is not to be supposed that enterostomy in every supposed case of volvulus has a curative, and in no single case a palliative effect. (The objection appears, in considering the uncertainty of the diagnosis of volvulus, and the small number of published cases treated by enterostomy, to be not quite a valid one. From a theoretical standpoint it would appear possible for a loop of intestine, twisted upon its mesenteric axis, to undergo reduction upon emptying the loop of intestine leading to it, by means of an artificial anus.) By means of laparotomy cure was obtained in six cases of volvulus. In six further cases the twist was found and removed, but the patients died from causes independent of the operation. In seven other cases death followed untwisting of the volvulus by means of laparotomy, partly in consequence of already existing peritonitis, partly from perforation of the bowel consequent upon gangrene, partly from collapse directly after the operation. In these nineteen cases, at least a technical success was obtained in thirteen instances, although but six patients recovered; in opposition to this are seven additional cases in which no measure of success followed the laparotomy; in one case death occurred during the operation, in another

case the obstruction was apparently removed, but the post-mortem showed that the volvulus was not entirely reduced. In three cases the obstruction presented the form of adhesions, and seemed to have been removed, but a volvulus remained, and caused death. In two cases the operation was abandoned before completion. Finally in four still further cases, because of well marked gangrene, the sphacelated portions were excised.

Among the cases of strangulation the author found seven described in literature, in which enterostomy was employed; six of these ended fatally; in the seventh, however, the diagnosis was not assured, although recovery followed. In no case, however, did the operation have a purely palliative effect; either the strangulation was removed, as in the uncertain case just mentioned, or the patient perished. In opposition to this, it is stated that in twenty three cases recovery followed laparotomy. In two instances of otherwise successfully accomplished laparotomy, death occurred from pneumonia. In seventeen cases the obstruction was removed, but death by peritonitis or collapse followed. In eight instances only was it found impossible to locate or remove the obstruction by means of laparotomy.

By far more favorable are the results of enterostomy in the cases of occlusion caused by flexion. In six cases, in which from the history, a flexion of the bowel could be diagnosed, recovery followed (the obstruction being overcome). In three other cases, a palliation of the condition only followed, and of these, the obstruction was subsequently overcome by laparotomy. Only one case is on record in which the operation of artificial anus caused death; in case of acute obstruction due to flexion. These favorable results are attributed to an easy performance of enterostomy, and of the absence of considerable damage to the peritoneum. In fourteen cases of flexion, laparotomy was followed by recovery; six times, despite of a technical success, death followed. In four cases the obstruction could not be found; of these two died. In the two remaining an artificial anus was established, and subsequently the obstruction was removed, and the artificial anus closed.

Basing his opinion upon these favorable results, the author declares

from the pathologico-anatomical standpoint, in case of volvulus and strangulation, laparotomy is decidedly indicated, while in flexion, both methods of operation offer equally good results. Only rarely, however, does the opportunity offer clinically of making with certainty the diagnosis of the particular anatomical form of intestinal obstruction. Our practice depending more or less upon external condition, he states, for practical purposes, the following rule: "Laparotomy is to be performed in all recent cases of intestinal obstruction where the necessary advantages offered by a well equipped hospital are at hand; enterostomy or artificial anus where these advantages are not obtainable, and where the operative procedure is too long delayed, and where the general condition has consequently suffered, so that in all probability the patient will not bear a laparotomy."—*Inaug. Dissert. Dorpat.*, 1888.

GEO. R. FOWLER (Brooklyn).

VII. Fecal Fistula Cured by Intestinal Anastomosis.

By ROBERT ABBE (New York). The patient was in a desperate condition from the effects of a fecal fistula, the result of a tear of the intestine during the removal of a small densely-adherent suppurating ovary—probably tubercular. On section, the intestines were found to be firmly matted together, and studded with tubercles. The intestine leading to the fistula was dissected out on either side of it for four inches, and cut squarely across. The ends were then turned in for half an inch, and closed by a continuous Lembert suture of silk. As it was impossible to turn the ends in opposite directions, they were laid side by side split open longitudinally for an inch and three-quarters, nearly to the end, and united with catgut apposition rings, with a half dozen reinforcing silk sutures outside. The entire wound was douched liberally with hot water, and a portion of the deeply adherent gut between the cut ends was dissected away; wound closed, except for a slight tamponade of gauze at site of fistula. On fourth day, temp. 102°; a mild purgative given; immediate improvement. Rapid convalescence.

The rings alluded to above are made thus:

A moderately heavy juniper cat-gut is wound closely on a test tube and soaked in hot water. After a while it is straightened out, wound

again loosely and soaked in hot water once more until it ceases to twist. Eight or ten turns are now made with this gut, over two pins stuck in a cork two inches apart, making a bundle somewhat smaller than a lead pencil. This is tied at four places with fine silk, to secure the strands parallel while being wound around like a cable with a continuous piece of the same catgut. The end of the piece is secured by threading it with a Hagedorn needle, and transfixing the whole bundle obliquely with it at the place of finishing. Six strong but small braided silk threads are now fixed to each ring, equidistant, on the face looking toward the other ring, which is to be laid against it. No knots are used. A needle pierces the ring between the strands, carrying the thread which is drawn through all but eight inches, and wound once and a half around, sinking between the encircling catgut, piercing the ring again, and is cut off. Curl the threads up between the oval, tie the rings tightly between two glass slides, so as to compress them; and preserve in alcohol.

In using the rings, let each thread have its own needle. Pierce intestine from within outward, less than a quarter of an inch from its cut edge. The ring should be laid on a damp folded towel, while the operator quickly pulls the threads through and passes the rings into the interior of the bowel. When the threads are tied and cut off, the apposition is perfect, but by a quickly made running suture outside all, a half inch of peritoneal surface is at once secured beyond the possibility of breakage. More than this is superfluous.

In invaginating the end of the cut intestine after excision, one will delay a long while if he tries to turn in first one and then the other edge, and will also find the mesentery try to turn in after it on the attached side. Prevent this by turning back mesentery for at least half an inch from the end. Then, seizing both lips with toothed forceps, plunge them directly into the lumen. The entire edge follows, and, holding to them by the left index finger and thumb, a quick running overhand suture of the slit thus formed is made.—*Med. News*, June 1, 1889.

FRANCIS L. HAYNES (Los Angeles).

VIII. Non-Strangulated Hernia. By MITCHELL BANKS (London). The author divided non-strangulated hernia into two groups:

1. Moderate-sized herniæ.
2. Very large and enormous herniæ.

This has been done because they are by no means on the same footing either as regards danger to life from the operation or liability to recurrence of the rupture. In the statistics which he gave the terms were used in the following manner:

By "quite sound" is meant that the rupture has never come down since the operation, that there is nothing in the way of a swelling to be felt or seen, and that there is no impulse on coughing. By "partial success" is meant that the rupture has slightly returned, or threatens to return if unsupported, but that, with the aid of a truss, the patient is in safety and comfort. In many of these cases no truss at all would keep the bowel up before operation, while after it support could be effectually given. In every instance the patients placed in this category declared that they were in a distinctly better position after the operation than before it. By "complete failure" is meant that the rupture is as large and troublesome as before the operation.

Among the fifty-nine moderate-sized non-strangulated herniæ two deaths are recorded. One was distinctly due to the operation. The other was doubtful, as the wound was all but healed, and there was no peritonitis or other lesion relating to the wound found after death. Of the sixteen very large and enormous herniæ four cases proved fatal. Septicæmia killed two patients, and unsuspected abscess, bursting into the peritoneal cavity after the patient was walking about and deemed sound, proved fatal in another, while in one case the operation could not be completed. Of the twenty-two cases of strangulated inguinal hernia, one an old man of seventy-seven, died from septicæmia and bronchitis. Of the nineteen cases of strangulated femoral hernia, two died, one never recovered from the collapsed state in which she arrived at the infirmary, and another was moribund when admitted. The statistics of permanence of cure, showed that, of the one-hundred cases of moderate-sized non-strangulated and strangulated herniæ combined, it has been possible to trace for very considerable periods seventy-seven.

Of these, forty-eight remain quite sound, seventeen are partial successes and twelve are complete failures. Of the sixteen cases of very large and enormous herniæ it has been possible to follow up ten. Of these, five remain practically sound, though all requiring some support to prevent return; three are partial successes, and two are complete failures. He further remarked that removal of the sac was best because of its simplicity. He was himself inclined to operate upon those who could wear a truss; but, in any case, removal of the sac was essential and repaired the irregularity of the peritoneum. He practiced stitching of the rings, but it was of less importance. Umbilical herniæ contained so much adherent omentum and bowel that they were seldom suitable for operation.

Mr. Thomas Bryant's (London) experience of those cases in which the sac was removed was that they succeeded best. After kelotomy the operation could not be considered completed until the sac had been removed. Operations in children were to be avoided, except where a truss could not be worn. Opening the sac almost quadrupled the risk. In adult life, operation was unadvisable when a truss could be worn. Large herniæ ought to be left alone; he had occasionally been obliged to operate upon them, but a truss must be worn afterwards.

Mr. Kendal Franks (Dublin) agreed that an operation was necessary in adults who could not wear a truss; also in adults who were athletes. A truss was a great detriment. He always, in operating, sutured the neck of the sac and the internal ring. The operation of twisting the neck of the sac could not be applied in cases where the cord was adherent to the sac. Strict antisepsis was essential to success, and good results were obtained either with silk or silver wire. His bias was in favor of operation. In forty cases he had had four returns.

Mr. Edmund Owen (London) also was unable to speak definitely of the results. He could only say that he was satisfied with the result of his operations up to the present. He had operated on a good many children, but he entirely agreed with Mr. Banks that children should not be operated on unless the hernia was absolutely beyond the control of a truss; for it was an undisputed fact that, with a fair chance, children did "grow out of" their inguinal weakness. The cases which

he preferred for operation were those of adults whose inguinal herniæ were associated with an atrophied or an undescended testis. In such cases the surgeon should remove the useless gland without compunction, and, having ligatured and pushed up the cord, should completely occlude with sutures the inguinal canal. The objection against the removal of the undeveloped testis was purely sentimental, for the gland was, almost for certain, of no physiological value. He did not believe in the surgeon being able to recognize, during the operation, the "internal abdominal ring" and the "conjoined tendon;" at any rate, though he knew them in the dissecting room, he ignored them in the hospital. He thought that it mattered little in the permanency of cure whether the surgeon used silver, gut or silk for closing the canal; but he would ask Mr. Banks how he dealt with the sac of that variety of hernia which descended within the tunica vaginalis. He was satisfied to tie the funicular process high up, flush with the peritoneal wall, so as to leave no depression to invite the subsequent descent of the bowel; he then divided the process below the ligature, and removed an inch or so of the testicular part of it. He did not believe in the desirability of fashioning and suturing an artificial tunica vaginalis; all that might be left to nature. The point on which he specially desired to join issue with the author of the paper was as regards the subsequent wearing of a truss. If the neck of the sac was obliterated and the inguinal canal thoroughly closed, no bowel should descend, and the truss, therefore, was unnecessary. He always opposed the use of a truss after the operation, for he had a strong opinion that the constant pressure of the pad went a long way towards promoting the absorption of the plastic material which was thrown out in the neighborhood of the ligature and sutures, and the definite organization of which had a considerable influence in establishing the permanency of the cure.—*Lancet*, Jan. 5, 1889.

IX. The Rapid Cure of Anal Fistula. By M. LONGO (Paris).
The author arrives at the following conclusions:

1. The method ordinarily employed in the cure of anal fistula, while not entirely exempt from risk, necessitates constant attention for at

least thirty days, and predisposes to relapse. (2) From the employment of antiseptic precautions, a method of cure is possible in which the result may be attained in a much shorter time. (3) These processes already employed with considerable success, consist essentially in the entire incision of the fistulous structure and the reunion by first intention of the outer surfaces. (4) Cure is ordinarily obtained within ten days. (5) The majority of fistulæ are amenable to the treatment, which is exempt from danger, which is usually not followed by relapse, and whose employment is not accompanied by any insurmountable difficulties, with a single exception of the rigorous application of the antiseptic method. (6) When the fistulæ are united, accompanied by extensive development of pathological tissue, or when their rectal orifice is situated very high up, or when the fistulæ are accompanied by hemorrhoids—then only is this method not applicable.—*Bulletin General de Therapeutique*, Nov. 15, 1888.

X. Œsophagotomy for Foreign Bodies. By GEORGE FISCHER (Hanover). In connection with a case of œsophagotomy for foreign body in the œsophagus, the author completes statistics of 108 œsophagotomies (*Deutsch Zeitsch* Bd. xxv and xxvii) with 12 additional cases. The following points of interest in these cases are noted. In one case attempts at extraction before operation resulted in the breaking off of the end of the money catcher, causing subsequent difficulty in its extraction. The tuberculum carotideum of the sixth cervical vertebra was mistaken for a tooth plate and exposed. During the operation it was necessary to tie the arteria thyroidæ superior and inferior. In another case it was impossible after performance of œsophagotomy to dislodge the foreign body, which subsequently spontaneously passed into the stomach and intestine. In five cases the œsophagus was stitched with catgut. For the open treatment of the wound, the iodoform tamponade was used. Kolaczek cauterized the wound, which was bathed in putrid pus with 5% chloride of zinc and then packed the same with iodoform gauze. In a case of secondary hæmorrhage from the mouth (Frew) the operator reopened the wound twice and at the second attempt tied the bleeding vessel in the wound. *Deutsch Zeitsch f Chir.*, Bd. 29, heft.

HENRY KOPLIK (New York).

XI. Further Experience in the Operative Treatment of Perforative Peritonitis. By J. MIKULICZ (Konigsberg). The results so far of the operative treatment of perforative peritonitis, however brilliant in single cases, are not as a whole, satisfactory. Not only the numerous failures, but still more the circumstance that the favorable termination depends in most cases less on our procedures than on accidents, fortunate, but beyond our calculation, show the present methods of treatment still contain gross and manifold defects. There is almost no doubt that by the operative interference many a patient is directly injured, *i. e.* their death is hastened. It is but a poor consolation to us that the said cases would have all ended fatally without an operation. Consequently it is our task to determine the factors which in the present methods act injuriously. To secure a rational basis for this we must first of all study more closely the pathology of septic peritonitis, divide the blended description heretofore presented of peritonitis in general, into a series of distinct types. For our purposes we must do this in two directions:

1. With regard to the starting point of the peritonitis; it is clear that for the operative therapy in the individual case an exact knowledge of the point of perforation is of the greatest value.
2. With regard to the form of the peritonitis; Mikulicz distinguishes in agreement with other authors, two forms, which, while they may pass into one another, represent as a rule two essentially distinct types. The first form is the acute or peracute peritonitis following the immediate infection of a large portion of the peritoneal surface, *e. g.*, where a quantity of the intestinal contents suddenly pours into the abdominal cavity through a large perforative opening. When death does not result in a few hours under the symptoms of an intoxication, this form is characterized by a sanguino-serous or purulent-putrid thin fluid exudation of variable amount. The peritoneum is injected, at times covered by a thin fibrinous deposit. Firmer and more extensive peritoneal adhesions are wanting. Mikulicz proposes to use exclusively for this form the term; *diffuse septic peritonitis*.

In the second form, which runs acutely or subacutely, the peritoneum is at first only infected in the immediate vicinity of the perforation. A

fibro-purulent exudation is formed, which at the start excludes the focus of infection from the still intact peritoneum by peritoneal adhesions. The process successively spreads, whilst between the glued viscera larger or smaller quantities of purulent exudation are encapsulated; thus the inflamed portion of the peritoneum remains continuously separated from the healthy, only that the limits are steadily spreading. For this form Mikulicz proposes the term: *progressive, fibro-purulent peritonitis*.

The separation of these two forms Mikulicz considers important because in his opinion the operative procedure must be essentially different in each. In the first form the present method of freely opening the abdomen, finding and suturing the perforative opening, as well as disinfecting the whole peritoneum so far as possible, appears entirely rational. It is to be hoped that future experience will teach how to accomplish this in the most practical and yet uninjurious manner.

In the second form this way would be wrong. The point is to protect most carefully the adhesions limiting the infected peritoneum. Mikulicz is convinced that not a small portion of previous operations have failed because just these adhesions were freed, and thus the entire peritoneum given over to infection. It follows that in this form not the peritoneal cavity in its whole extent but each intra-peritoneal focus of exudation must be opened separately. On this principle Mikulicz operated the following two cases with success:

1. A boy, æt. 15 years, was suddenly attacked Nov. 15, 1888, with symptoms of peritonitis. Admitted to the surgical clinic Nov. 19. A peritonitis starting from the cæcum was diagnosticated, and immediately an intra-peritoneal pus-cavity located over the right crista ossis ilei opened. Nov. 20 the incision was lengthened along Poupart's ligament to the rectus muscle. A second large cavity was opened and the perforated vermiform appendix resected. Nov. 29, incision over the left Poupart's ligament. About one-half liter of stinking pus was discharged. Dec. 5 two cavities in the median line, each egg-sized, were opened. Dec. 17, opening of a larger abscess in the left pelvis, starting from the inner angle of the former wound. Complete relief from then on. The pelvic abscess was drained upward by caout-

chouc tubes, the remaining abscess cavities filled with iodoform gauze.

2. A man, æt. 29 years, slender build, was attacked the beginning of June, 1887, with the symptoms of a perityphlitis; June 12, symptoms of a peritonitis involving the lower half of the abdomen. Discharge of 100-300 cm. of stinking pus through an incision over the left Poupart's ligament. June 12, discharge of about a liter of similar pus from the pelvis through an incision in the rectum. June 20, a pus cavity was opened over the right crista ilei and an anus preternaturalis formed, opening from a loop of the ileum. Although the symptoms of peritonitis now subsided in a few days, the patient recovered but slowly. Hence the cure of the anus preternaturalis was not undertaken until January, 1888. As the opening of the ileum into the cæcum seemed to be impermeable, an ileo-colostomy was performed above the cæcum. Since March, 1888, the patient has enjoyed undisturbed health and presents a vigorous appearance.

In the first case 6 intra-peritoneal pus-cavities were emptied through 3 incisions, in the second case 3 cavities by the same number of openings. In each case the openings were made at different times according as the separate foci became evident. The diagnostic indications were increased resistance and pressure-sensitiveness, dullness, an increase of the previously lowered bodily temperature. In doubtful cases an exploratory puncture was made. Moreover Mikulicz believes that fibro-purulent peritonitis does not spread as erratically as we may have heretofore supposed. Probably certain rules will be found even here. According to Mikulicz, the incisions must divide the abdominal parietes where the pus cavity appears most prominent; they must not be too small.

Mikulicz advises not to sew them up, but to fill the cavities loosely with iodoform gauze, possibly putting in a caoutchouc drain. For washing out the abscess cavities use as indifferent fluids as possible (boric acid). The washing out must be done with extreme care (very weak current) lest the adhesions be ruptured.

As to after treatment, he recommends keeping the bowels quiet by the free use of opium and suitable diet. Finally, Mikulicz says the pa-

tient should be kept under close observation until the abdomen is everywhere soft and painless, the bodily temperature has remained normal for several days, and the general feeling of well-being is completely established.—XVIII *Germ. Surg. Cong., Author's Report. Centbl. f. Chir.*, No. 29, 1889.

XII. The Operative Treatment of Perforative Peritonitis. By F. KOENIG (Goettingen).—In the discussion of the foregoing paper, Koenig mentioned the extensive and favorable results of American surgeons in cases of traumatic perforative peritonitis. He also described a case of stabbing in the left inguinal region, admitted 15 hours after the injury with distension and sensitiveness of abdomen, and vomiting. He enlarged the wound, let out turbid fibrinous fluid, and sewed up 4 punctures with 2 linear injuries of the gut wall. Abtusion with warm water, reduction, closure of external wound with drainage. In 3 weeks patient was completely cured.

Dr. Rosenberger (Wurzburg) reported a successful operation on a boy, æt. 12 years, moribund from perforative peritonitis. Incision as for ligation of left iliac artery. Discharge of stinking pus and a large faecal concretion. After holding patient so as to allow the pus fully to discharge drain and dressing were applied without irrigation. Cure.

Dr. Wagner (Koenigshutte) had operated three times within a year. (1) For typhoid perforation in a convalescent woman; eventration of intestine, irrigation, suture of wound without drainage; cure. (2) For traumatic perforating peritonitis 18 hours after injury. Intestine perforated at three points which were sutured. Irrigation. Putrid peritonitis already existed. Death in 14 hours under collapse. (3) Powerful man suddenly attacked with symptoms of ileus. Putrid peritonitis from perforation about a handsbreadth above the cæcum. Suture of the opening. Result as yet uncertain—operated only a few days previously. Wagner reduces the protruding intestines by a piece of iodoform calico pinned at the corners to the abdominal wall.

Dr. Steltzner (Dresden) reported two cases of round ulcer of the stomach in young girls, operated within 12 hours of the perforation.

Both were fatal, one from perforation of a second ulcer. Still he favors operating in such cases.—*Centbl. f. Chir.*, No. 29, 1889.

WILLIAM BROWNING (Brooklyn).

XIII. Laparotomy in Chronic Peritonitis. By L. PROCHOWNICK (Hamburg). The author is of the opinion that much of the success claimed for operative interference in tubercular peritonitis is attributable to errors of diagnosis, and that the same also applies to other peritoneal inflammations. It is well known that the removal of small and benign abdominal tumors is sometimes extremely difficult owing to the presence of severe complicating lesions which had not been recognized before operation, and sometimes also in case of the expected tumor an encapsulated peritonitis is found. On the ground of these facts, we are justified in operating in all forms of chronic peritonitis when other measures have failed.

The author has performed laparotomy in 9 cases of chronic peritoneal inflammation. Four of these cases, in which tuberculosis was present, have been already reported by Dr. Spaeth. In the remaining five a correct diagnosis was only made in two cases, before operation.

Four cases were examples of chronic peritonitis and had their origin in the pelvic tissues. No signs of uterine, tubal or ovarian disease were present, and gonorrhœal infection could be excluded. The cases were all characterized by adhesions of the omentum to the pelvic organs. These omental adhesions occur in many cases of acute pelvic peritonitis, and give rise to intestinal and gastric symptoms by interfering with the free movements of the omentum.

These symptoms consist of nausea, vomiting, gastralgia, flatulence, abdominal distention, and, if the omentum is adherent to the pelvic viscera, rectal and vesical tenesmus, constipation alternating with diarrhœa. Adhesion of the omentum to the generative organs gives only few symptoms, nausea and pain in the stomach after exertion, menstruation attended with cardialgia, pains radiating from the umbilicus to the labia.

If this symptomatology be well studied the diagnosis of omental adhesion is as readily made as that of tubal or ovarian trouble.

Adhesion of the omentum to the parietal peritoneum is usually present but gives no symptoms unless there be a complicating hernia.

The author's cases also show that inflammation of the pelvic peritoneum may give rise to chronic peritonitis with the formation of encapsulated exudations, without the uterus, ovaries and tubes participating in the disease except secondarily. In these cases the attempt was simply made to remove the chronic peritonitis and its consequences, and to leave behind the tubes and uterus as they only showed slight signs of disease.

The attempt was entirely successful, the patients making a good recovery and two becoming pregnant, though they had previously been sterile.

The writer concludes that in chronic peritonitis, especially where extensive omental adhesions exist and other measures have proved unavoidable, laparotomy is indicated. But the operator should be content with removing the peritoneal lesions, and leave the uterus and its appendages unless they be markedly diseased.

The importance of chronic peritonitis in producing many of the symptoms in cases subjected to castration has not been as yet recognized. Schroeder and Martin have successfully employed conservative treatment, and the latter regards the accompanying chronic peritonitis as the causative factor in the majority of cases of chronic oophoritis and disease of the tubes. Other observers have also called attention to the frequency with which chronic peritoneal and omental adhesions are found in secondary laparotomies, and their importance in the symptomatology of the case.

This shows that we should distinguish the symptoms attributable to chronic peritonitis from those due to disease of the other organs, and try to prevent at the first operation the development of subsequent peritoneal trouble (adhesions). This can be accomplished by loosening adhesions, avoiding strong antiseptics and astringent fluids in the abdominal cavity, removal of the contused omentum, strict toilet of the peritoneum, and the avoidance of opiates before and after the operation.—*Deutsche Medicin. Wochenschrift*, No. 24, 1889.

F. C. HUSSON (New York).

XIV. A Substitute for Ligature of the Pedicle en masse in Abdominal Surgery. By L. A. STIMSON, M. D. (New York). The author considers ligature of the pedicle *en masse* objectionable because (1) it is not always an efficient protection against hæmorrhage and (2) the mass of tissue embraced by it and forming the stump is sometimes so large or so related that it can not be safely returned within the cavity and treated intraperitoneally, but must be fixed in the parietal wound to be cast off as a slough and thus necessitate healing by granulation with its delays and risks. The consideration which has impelled this dangerous plan seems to have been the supposed necessity of tying all divided tissues in order that all hæmorrhage may be prevented, not only from the larger vessels but also from the minute vessels of the peritoneum and connective tissue. The author does not think that this necessity exists, and believes that this mode of ligature should be abandoned, except certain special cases, for that which is the rule in operations upon other parts of the body, the ligature of the arteries alone with the smallest amount of additional tissues, and every effort should be made to exclude the peritoneum itself from the grasp of the ligature. He considers preliminary ligature of the uterine arteries in continuity in supracervical or total abdominal hysterectomy a special and very valuable application of the substitution of isolated ligature of the vessels for the ligature *en masse*. The capital point to be attended to is that the uterine arteries should be tied sufficiently low down in the pelvis before branches of any size are given off, to avoid the necessity of securing these branches later when they are divided. The advantages of the operation are: rapidity and ease of execution, absolute and permanent security against hæmorrhage, relief from the necessity of creating strangulated stumps with the concomitant risks of setting up suppurative or septic processes, and immediate closure of the abdominal wound. In cases in which it may be deemed desirable to retain the cervix, it can be entirely shut off from the peritoneal cavity by drawing the peritoneum together over it, and its raw surface and that of the subperitoneal space can be drained by a tube placed in the cervical canal and brought out through the vagina. The paper includes the details of a case of supracervical hys-

terectomy in which the proposed method was satisfactorily practiced.—
American Surgical Association, 1889.

JAMES E. PILCHER (U. S. Army).

XV. Cancer of the Cardiac Portion of the Stomach; Metastasis in the Right Lobe of the Liver. By Prof. C. A. EWALD (Berlin). The patient was a woman, æt. 53 years, who was admitted to the Augusta Hospital, March 12, 1889. She was extremely emaciated, and palpation showed a tumor of the size of an apple in the right side; this tumor was slightly movable. Patient vomited all food undigested, even milk. Examination with a bougie revealed an impermeable stricture at the cardiac end of the stomach, which was undoubtedly of a cancerous nature. The abdominal tumor was supposed to be metastatic, either pelvic in origin or a dislocated and carcinomatous kidney.

As the patient's condition became rapidly worse, and it was found impossible to nourish her by enemata, gastrostomy was suggested, and performed by Prof. Kiister. The patient was fed through a canula introduced through the wound, and only small quantities of food could be introduced at a time owing to the contraction of the stomach, and from the fact that the canula is pushed against the posterior gastric wall. A tube was then introduced into the pylorus, and the food, peptonized milk, was poured directly into the intestine. Although as much as half a litre was retained in this way the patient succumbed to progressive marasmus.

The autopsy showed that a portion of the right lobe of the liver projected as far as the horizontal ramus of the pubes, being constricted above, at which place was seated a cancerous nodule of the size of an apple. The stomach was very small and its cardiac portion was occupied by a large carcinoma which extended posteriorly over the lesser curvature, and completely surrounded the cesophagus.

The author recommends in cases in which the cancer involves the cardiac end of the stomach and the lower portion of the cesophagus, that after the performance of gastrostomy the food should be introduced directly into the intestine by means of a tube passed through the pylorus. Hence the fistula should be established as close as pos-

sible to the pylorus, for in these cases no gastric juice is secreted and nothing is gained by introducing the food directly in the stomach.—*Deutsche Med. Woch.*, No. 23.

F. C. HUSSON (New York).

XVI. Exploratory Gastrotomy Followed Immediately by Median Laparotomy for the Removal of a Wooden Spoon Which had Perforated the Stomach into the Abdomen. By M. LE DENTU (Paris). A man æt. 21 years, while attempting to imitate a sword swallower, passed a wooden spoon 26.7 cm. long into his pharynx, the handle first. It slipped from his hand and passed into the œsophagus. He suffered no inconvenience from the occurrence, and ate his ordinary dinner, after which, however, he experienced pain of great severity which increased until the sharp handle of the spoon perforated the gastric wall. The next morning he walked to the hospital where the handle of the fork was felt by palpation just above and to the left of the umbilicus; a half an hour later the author could not locate it. Believing it to be in the stomach, gastrotomy was performed and the stomach exposed; careful examination through an incision in its wall showed that the foreign body was not present in its cavity. Further examination, however, discovered it in the abdominal cavity in the median line and extending from above the umbilicus down into the bony pelvis. In order to remove it readily a second incision was made in the linea alba, the spoon seized with forceps and readily drawn out. Thorough inspection failed to discover a point of exit for the foreign body either in the gastric or intestinal wall and the author believes that the irritation of the passage of the body kept the muscular coats closely applied upon it during its exit and produced a rapid spontaneous occlusion of the perforation immediately afterward, and discussed the matter at considerable length. His own incision into the stomach, and both the hypochondriac and median abdominal incisions were closed and the patient passed on to recovery.—*Revue de Chirurgie*, April, 1889.

XVII. Gastrotomy for the Removal of a Fork. By F. TERRIER (Paris). The point of particular interest in this case was that

the foreign body was extracted through a median incision. This incision appeared to the author much the easier and the most favorable for the examination of the stomach. It was very easy to free the fork through the stomach wall, to grasp them without touching an important vessel and draw them out so as to extract the foreign body readily. He sutured the mucous and serous coats separately and returned the whole into the abdomen, and stitched the abdominal wound as in any laparotomy.—*Société de Chirurgie de Paris*, May, 1889.

XVIII. Digital Divulsion of the Pylorus for Cicatricial Stenosis. By J. M. BARTON, M.D. (Philadelphia). A woman, æt. 48 years, who had suffered from gastric ulcer, some years previously, presented a greatly dilated stomach; was accustomed to vomit one or two quarts of material at one time; articles eaten days and even weeks before could be recognized in the rejected material; the vomiting was not accompanied with nausea and did not affect the appetite; she suffered from obstinate constipation, and the ordinary purgatives had no effect. From these indications cicatricial stenosis of the pylorus was diagnosed, and the abdomen opened, under chloroform, by a median incision four inches long terminating at the umbilicus. The stomach was found directly under the cut, and the pylorus was hard and clearly contracted. An incision $1\frac{1}{2}$ or 2 inches long was then made through the healthy wall of the stomach and digital examination showed that the pylorus was contracted to about the size of a No. 10 French catheter, the margins being hard and fibrous. It was then gradually dilated, first by a small uterine dilater, then by œsophageal forceps and finally by the operator's index and middle fingers, which were separated about an inch, giving the pylorus a circumference of about $4\frac{1}{2}$ inches. The wounds in the stomach and abdomen were then closed and the patient passed on to an uninterrupted recovery, milk in drachm doses being taken on the fifth day, and free diet being resorted to after a month. The paper presents a table of 25 cases and a discussion of the literature of the operation.—*American Surgical Association*.

JAMES E. PILCHER (U. S. Army).

XIX. Elastic Suture of the Liver. By DR. BABACCI (Macerat). At the last meeting of the Italian Society of Surgeons the author read a note on this subject. To obtain a complete checking of bleeding, after an incision has been made into the liver, it is necessary to suture this organ, in such a way as to establish perfect adhesion to the affected surfaces. For this purpose elastic sutures are best. Not one single animal on which he has tried this method of suture has suffered from peritonitis or other infectious disease. These sutures with the elastic thread, allow a certain increase in size of the organ, without tearing the tissues. The extremities of the elastic thread are connected with the sutures by a silk ligature.—*Med. and Surg. Reporter*, June 1, 1889.

XX. Splenectomy Following a New Febrile Infection due to a Special Bacillus. By DR. D'ANTONA (Italy).—The following case constitutes what he thinks to be a new disease. A child, *æt.* $2\frac{1}{2}$ years, son of a physician, was attacked with a left pleurisy with effusion; he recovered, the exudation being absorbed. Two weeks after the disappearance of the effusion, a gastro-intestinal catarrh, accompanied by jaundice, set in. The child recovered, but from this moment began a sub-febrile state, with a temperature that has gradually increased from 100.2° , 102.1° , up to 104° Fahr. in the evening, the thermometer marking 100.2° in the morning. An examination of the abdomen gave evidence of a tumor of the spleen. The child was then taken to the country and for several days he became worse; the thermometer in the evening went as far up as 105.4° ; but on the thirteenth day the fever disappeared.

During these stages of aggravation, the spleen was excessively hypertrophied; later the splenic tumor persisted, notwithstanding the general amelioration in the state of the patient, who was treated with quinine, arsenic and the mercurial preparations. When he was brought back to town, in a splendid house and in a most healthy locality, far from any malarial influence, he was again seized with fever, and one month after his return he still had a temperature of 101° in the axilla. His general state, however, remained good; he had a very good appe-

tite, ate a great deal, was on his feet, and walked even with a temperature of 104° Fahr. The fever was of the continuous type; it never was intermittent and was never accompanied by chills or sweats. The spleen, however, always increased in volume. An antimalarial treatment was then recommended, but it proved useless. The pulse was small and gaseous. The intellectual faculties were well preserved. All belief in a malarial influence had to be put aside; we had to deal with a special infection of the spleen, as this organ increased in size with the fever. The author proposed the extirpation of the spleen, which was so much hypertrophied and indurated that it reached down to the right iliac fossa. The operation was permitted, and on the same day on which splenectomy was performed there was a reduction of temperature to 99° ; then a slight fever, reaching in the evening to 100.2° and even 102° developed. The child ate well. Then supervened a gastro-intestinal catarrh, the temperature went up to 104° ; then came a purulent otitis, with a temperature of 105.5° ; the liver increased in volume, until it extended beyond the umbilical line, but decreased in size afterward and returned to its normal size. The child was at this time in good health for about five months, when he died of tubercular meningitis, which might have been transmitted to him by his father, who was then treating two patients suffering with the same disease.

The extirpated spleen weighed as much as one-tenth the total weight of the body. An examination of the blood before the operation gave a negative result. The blood obtained from the spleen gave rise, eight days after the operation, to colonies of bacilli exactly similar to typhoid bacillus. Bacilli developed very rapidly on gelatin and water at the temperature of 64.4° ; but on potatoes this bacillus proved absolutely sterile, which is an important point in the differential diagnosis from the typhoid bacillus. Inoculation of animals with this bacillus gave negative results. From these studies he infers that he had to deal with an infectious disease, not yet described.

Dr. Ceci drew attention to the unexplainable relation which seems to exist between tumors of the thyroid body, spleen and tonsils, and menstruation. The following observations he made on a young wo-

man from whom he removed the spleen three years ago. Twenty days after the operation a hypertrophy of the thyroid gland developed; four months later the tonsils became very much enlarged and one had to be removed. Ten days after this last operation the goitre had disappeared.—*Med. and Surg. Reporter*, June 1, 1889.

XXI. A Comparison of the Various Methods for the Cure of Hernia. By C. H. MASTIN, M. D. (Mobile).—This paper is an impartial review of the history of the treatment of hernia, presented for the purpose of initiating a discussion upon the subject. From comparison the author finds that no fixed rule of procedure is established, and although the radical operation is a marked improvement, it can not be considered perfected, because the methods hitherto resorted to have not proved radical in results. The operation is ideally correct, but the question arises, whether, with the certainty of success, the risk justifies the operation; especially so if the circumstances of the individual are such that he can content himself with the use of a properly adjusted truss.

M. H. Richardson (Boston) did not believe in advocating the radical operation in trifling cases, but where it is necessary for any reason, his preference has been for the invagination of the sac as proposed by Macewen. In cases of strangulated hernia he dissects out the sac and stitches the ring, not using invagination.

D. Hayes Agnew (Philadelphia) considers Barker's operation the most philosophical, although he has tried about all the various procedures advanced. The classes proper for operation are two: (1) All cases of strangulated hernia and (2) those rebellious cases which can not be controlled by a truss and which place the lives of the patients in great risk.

W. W. Keen (Philadelphia) believed that the operable cases were gradually receding beyond the limits set by Dr. Agnew and that we are tending progressively to include a large number of cases among those in which operation is justifiable. He prefers the open method, and would use either McBurney's, Macewen's or Ball's.—*Am. Surg. Ass'n*. 1889.

XXII. The Surgical Treatment of Gangrenous Hernia. By M. H. RICHARDSON, M. D. (Boston).—Opening his paper with a summary of recent views upon his topic, the author reports four cases of his own in two of which he treated the lesion by excising the gangrenous gut. This method he strongly favors. The time required for it is short, not over an hour in his cases; the only other precaution required is the protection of the peritoneal cavity from the introduction of septic material. The extent to be resected depends upon the amount of gangrene, a safe rule being to take an inch to the sound side of the constriction. The reasons for performing resection where the conditions are favorable are (*a*) that we have in successful cases a return to perfect health in a few weeks; (*b*) that we avoid the dangers and discomforts which accompany artificial anus as well as those from opening the intestines high up; and (*c*) that we do not have to subject the patient to the additional risk of secondary operations. He believes the sum of the dangers of the palliative operation to be fully as great as that of immediate excision.—*American Surgical Association*, 1889.

XXIII. Surgical Interference in Acute Intestinal Obstruction. By B. W. RICHARDSON (London). The author concludes his paper as follows:

1. In all cases of acute intestinal obstruction the use of minor measures, such as purgatives, enemata, galvanic irritation and massage, are, when judiciously used, correct up to the point of the appearance of vomiting of matter of a distinctly fecal character.
2. So soon as this symptom is established there should be no hesitation in opening the abdomen for the exploration of the obstruction and the attempt at removing it.
3. Obscurity of diagnosis in regard to the seat and nature of the obstruction ought not, in the presence of this special symptom, to prevent the resort to surgical interference, because sometimes what is inferred to be a complicated obstruction turns out to be an extremely simple one; and, again, if the obstruction be complicate, it may admit of being relieved without any further serious danger to the patient than would arise from omitting the operation, since the

greater the difficulty the more urgent is the demand for interference, and the more certain the death if surgical aid be not afforded.—*Asclepiad*, May, 1889.

XXIV. Intussusception of the Small Intestine. By G. H. MAKINS, F. R. C. S. (London). At the meeting of the Clinical Society of London, May 10, 1889, the operator gave the notes of a case of intussusception of the small intestine.

A female child 4 years old, under the care of Dr. Goodhart, was in the Evelina Hospital, suffering from whooping-cough and broncho-pneumonia. On December 1, 1888, she complained of pain in the stomach and was sick at times, retching continually between the acts of vomiting. On December 2 the condition was worse, the child vomiting frequently, suffering attacks of paroxysmal pain, and the bowels were confined. Chloroform was given and examination of the abdomen revealed a tumor in the umbilical region. A rectal examination proved negative. Dover's powder in three-grain doses was ordered every second hour. A normal action was passed after the rectal examination, but there was at no time tenesmus or passage of bloody mucus and little distension of the belly. On December 3d the abdomen was opened, and after attempts at reduction of the invagination had failed, the tumor, involving about nine inches of the ileum, was excised between ligatures and an artificial anus established. The child died two hours later of collapse. The special symptoms pointing to invagination of the small intestine were alluded to, also the tightness of the adhesions present; as, even after removal and longitudinal section, they were with difficulty separated. The unsatisfactory nature of the results of the operation of laparotomy and reduction was noted, and it was suggested that in all cases where a short but careful examination showed that reduction would be difficult, the invagination should be excised between ligatures, and an artificial anus established at once. The arguments on which this suggestion was based were the unsatisfactory results obtained, due in part to the prolonged character of the present operation; and, secondly, the fact that the bowel in fatal cases either remained paralyzed or the intussusception recurred. Were resection

resorted to early except as a last resource after prolonged attempts at reduction, the operation would be most materially shortened, and the patient would have a much better immediate chance of recovery.—*Brit. Med. Jour.*, May 18, 1889.

XXV. Laparotomy in Visceral Wounds.—By C. S. BRIGGS, M. D. (Nashville, Tenn.). The author concludes his paper by the following general conclusions:

1. That laparotomy for traumatism should be resorted to in the majority of cases in which the existence of visceral injury is clearly established, the exceptions being such instances as from the great extent or necessarily fatal character of the wound, the possibility of recovery is absolutely precluded.

2. That where doubt exists as to the presence of gastro-intestinal lesions, Senn's insufflation method should be employed.

3. That the median incision is best adapted for laparotomy in these cases, except in penetrating wounds received from behind or where it is evident that one of the immovable viscera has been injured at such a point as to render the necessary examination impossible through the opening provided by the median incision.

4. That inspection of the abdominal contents should be thorough and painstaking, even at the risk of added shock by prolonged search, though expedition in this, as well as in other parts of the procedure, is certainly to be recommended.

5. That while it is unquestionably necessary for speedy repair in the approximation of visceral wounds to unite serosa to serosa, multiplied stitching is to be avoided, inasmuch as the nature of the reparative process in this class of wounds does not require such intimate closure; the advantage to be obtained thereby is more than counterbalanced by the loss of time, and a great number of stitches in itself constitutes an element of danger.

6. That the continuous suture is the best adapted for nearly all intestinal wounds, as it is the simplest, the most quickly made, and can be used in such a manner as to possess all the advantages of the Lembert suture.

7. That when wounds with great loss of substance or closely placed multiple wounds are met with, Senn's approximation method by intestinal anastomosis may, when better understood, be substituted for resection, now considered necessary in such complications.

8. That the peritoneal toilet should be carefully made, and that the penetrating wound of the abdominal wall should be closed with as scrupulous regard for the care of the peritoneal injury at that point as at the wound in the median line.—*Nashville Jour. of Med. and Surg.* May, 1889.

XXVI. Gunshot Wounds of the Intestines. By T. A. McGRAW, M. D. (Detroit). The author has collated the literature of this subject with care, and has made a number of experiments upon animals, from which, together with his own experience with the accident in the human subject, he has deduced his opinions. He considers that:

1. The gravity of an injury of this kind depends partly upon the missile.

2. Bullets which enter the abdominal cavity pass in a nearly absolutely straight line from the orifice of entrance through the peritoneum to that of exit, or to their final stopping place in the viscera. The author is inclined to think that the whole doctrine of balls glancing from soft tissues is a fable founded upon imperfect observations and wrong deductions.

3. An incision made directly in the course of the ball will give the shortest route to the injured parts.

4. The contents of the bowel may be made to discharge through an open gunshot wound by manipulation and pressure. If such a wound will not act in this manner, it is because it has been closed by the eversion of the membrane or by the exudation of plastic lymph; in either case the wound would probably recover without suture if kept properly aseptic, provided that the bowels are kept perfectly quiet.

5. An empty condition of the alimentary canal is most favorable to healing.

6. Agglutination and limitation of the morbid process consequent upon gunshot wounds of the intestines may take place as early as the sixth day.

7. Senn's hydrogen-gas insufflation should be used with great caution after the lapse of a few hours, since it might burst open spontaneously agglutinated wounds and make general a peritonitis which had become circumscribed.

8. The dangers of an operation for penetrating gunshot wounds of the abdomen are directly in proportion to the length of the operation and the amount of evisceration. The operation may be shortened (*a*) by strictly limiting the examination of the viscera to such of them as may have been in the course of the ball; (*b*) by suturing wounds in the gut, whenever it is possible, instead of excising them, the latter severe operation being reserved for wounds that do not permit inversion and suture; (*c*) by omitting all operative measures, even suture, in all wounds which have become so occluded by plastic material that they are imperious to the contents of the bowel; (*d*) when many wounds occur near together, by operating first on those wounds which imperatively demand it and leaving to the last those which may recover without operation; (*e*) by never eviscerating a patient except, first, when hemorrhage is extensive and uncontrollable, or, second, when there is evidently a discharging wound which cannot otherwise be found.

9. In cases of gunshot penetrating wounds of the abdomen, in which patients may be evidently too weak to endure the radical operations for the repair of their injuries, efforts may be made to give them relief by operations of less severity.—*Am. Surg. Asso.*, 1889.

JAMES E. PILCHER (U. S. Army).

XXVII. Inguinal versus Lumbar Colotomy. By HARRISON CRIPPS (London). The author had performed fifteen lumbar and, twenty-two inguinal operations with but a single death in each class of cases, giving a mortality of only a trifle over five per cent. He considered the inguinal method vastly the superior. There were grave objections to the lumbar method, such as (*a*) the depth of the bowel in a fat subject; (*b*) the very limited space in which the surgeon had to work between the iliac crest and the last rib, which often made it difficult to find the bowel without some damage to the surrounding tissues; (*c*) the frequent difficulty in recognizing the color, so that num-

crous mistakes had been made in opening the small intestine and even the stomach; (d) and perhaps the gravest objection of all is the not infrequently abnormal location of the colon, making it quite impossible to find it by the lumbar wound. The inguinal operation on the contrary was liable to none of these objections, there being plenty of room, the bowel could be absolutely identified, there was no tension on the stitches and little difficulty in finding an abnormal colon, and it also possesses the great advantages of enabling the abdomen to be explored and the site of the obstruction to be verified before opening the bowel, so that the mistake of being below the lesion could not occur. He had not found prolapse of the bowel more frequent in one class than in the other and by a little care it could to a great extent be avoided in the inguinal operation, and he had no hesitation in opening the bowel immediately in urgent cases. In operating, Mr. Cripps makes an incision two and a half inches in length crossing an imaginary line drawn from the anterior superior spine to the umbilicus, an inch and a half from the former bony point. He considered it a mistake to use too many sutures, thus causing unnecessary strangulation of the skin and preventing primary union. He considered the time of opening the bowel important and preferred to wait until the fifth or sixth day if all went well, but if the abdomen became distended or there was the slightest vomiting, it should be opened at once. Firm pressure by a pad and several turns of bandage were very important for the first few days, for with any strain on the bowel, it was liable to burst away. The subsequent inconvenience arising from the new anus was but slight, the patient usually having a motion once a day with knowledge of when it was coming and with the power of controlling it by pressure. He believed that the inguinal method was the operation of the future and that the lumbar operation would be merely retained for a few cases of complete obstruction.—*Lancet*, May 4, 1889.

JAMES E. PILCHER (U. S. Army).

GENITO-URINARY ORGANS.

I. The Treatment of Injuries of the Urethra and their Sequelæ. By C. HÆGLER (Basel). This paper, in addition to a report of cases of injury to the urethra treated in the clinic of Socin also includes a series of experiments by the author on this subject. The paper is confined to the discussion of wounds caused by a lacerating force acting upon the perineum followed by subcutaneous rupture or contusion of the urethra. As is known (Bryant) they form 17% of the injuries of this part. The author, after giving an exhaustive literary review of the subject takes up his own experiments made upon eight dogs. In these animals incised wounds with sutures heal without complication. Incised wounds without suture heal leaving a larger cicatrix but no marked disturbance of function. Permanent catheterization is to be rejected. Contused wounds of the urethra with suture heal rapidly and leave no functional disturbances. If contused wounds be allowed to heal without suture there results (as Roser also found in man) an adhesion of the urethral and cutaneous cicatrices and an increased calibre of the urethra at this point. Incised and contused wounds give rise to considerable hæmorrhage from the posterior portion of the urethra. Arguing from these experiments the author, thinks that in man the principle of therapy should include a prevention of urine retention with regularity in its discharge. Infiltration of urine and phlegmon are to be avoided; the torn extremities of the urethra are to be united as quickly as possible. If the contusion is marked and it is possible to introduce a catheter into the bladder, this should be done at regular intervals or a permanent catheter introduced. Vesical puncture and external urethrotomy are the alternatives. The external urethrotomy will be the choice in severe contusions. In these cases, Prof. Socin proceeds as follows: The focus of contusion is laid bare as soon as possible by an extensive perineal incision. The wound is thoroughly cleared of clots and urine. The posterior extremity of the urethra is sought for; this is not very difficult (it being the point of greatest hæmorrhage); the torn end of the urethra floats in the irrigating fluid. Primary intention is sought for by suturing the urethra. In subsequent traumatic stricture of urethra Socin excises the urethral callus

and sutures the urethra including the whole thickness of the stricture with mucous membrane in the sutures. The author concludes that in addition to the principles above mentioned, the question of including or excluding the urethral mucous membrane in the wound sutures requires further study. The permanent catheterization for 24 to 48 hours is to be preferred to frequent catheterization. The perineal wound should not be closed, in order to prevent infiltration. The use of bougies is only permitted after complete healing of the wound. In traumatic strictures including urethral and surrounding structures, forced dilatation or internal urethrotomy are of little use. The correct therapy can only be the removal of the diseased portion of the urethra. In the latter case an accurate urethral suture should follow as in the case of recent traumatisms.—*Deutsche Zeitsch. f. Chir.*, Bd. 29, heft 4.

HENRY KOPLIK (New York).

II. The Radical Cure of Deep Urethral Stricture. By E. L. KEYES, M. D. (New York). As a result of careful studies upon this subject the author concludes:

1. There are three forms of organic deep urethral stricture: The superficial linear fibrous, with inflammatory and spasmodic complications (which I call the soft stricture); the purely cicatricial fibrous stricture; and the inodular stricture, in which there is development of inodular tissue over and above the true fibrous cicatricial element.
2. Soft strictures are occasionally (but by no means always) capable of radical cure or dilatation—and the addition of mild electrolysis does not prevent this cure by dilatation.
3. Pure linear fibrous stricture, especially if traumatic and occurring in patients who have never had gonorrhoea, may sometimes be radically cured by thorough longitudinal division of the stricture on the roof as well as on the floor of the canal, and by a maintenance of the cure for a moderate time by the occasional passage of very large sounds. I beg to reserve final opinion on this point for a future communication.
4. Inodular stricture does not seem to be radically curable by this method.
5. It seems possible that inodular stricture may be radically cured

by a total excision of all the morbid tissue, and suture of the healthy divided urethral ends; or, in cases where extensive loss of tissue makes such approximation impossible, by the transplantation (Wolfler's method) of strips of mucous membrane derived from an outside source.—*N. Y. Medical Record*, May 25, 1889.

III. Absorbent Power of the Bladder. By Dr. TRICOMI (Rome).

The author read a paper on this subject before the Italian Society of Surgeons at its last meeting. He had studied the power of absorption of the bladder with the healthy and pathological epithelium, in rabbits, dogs and guinea-pigs. He used mechanical irritation, such as the introduction of a foreign body into the bladder, to produce the epithelial alterations. The following are his results, taking as a comparison the absorption of the same substances by the hypodermic method of administration.

In a bladder, having a healthy epithelium, the absorption is equal to that which takes place from hypodermic injection, with the following substances; sulphate of strychnine, medicinal prussic acid, chloroform, sulphuretted hydrogen. The absorption is less rapid for cantharidine, carbolic acid, corrosive sublimate, morphine, and especially for cocaine; for, to obtain in rabbits the same toxic effect as with one-half grain injected hypodermically, we must inject into the bladder from two to two and a half grains of cocaine. Again, if we inject putrefied liquids into a healthy bladder, we get no results.

In cases in which the vesical epithelium is in a pathological state, absorption of substances of the first series—strychnia, hydrocyanic acid and chloroform—is the same as by the hypodermic method. The absorption of substances of the second series is less rapid than in cases in which the bladder is normal. Injections of micro-organisms has always been followed by positive signs of intoxication in a bladder the epithelium of which has been mechanically and chemically altered. In a bladder undergoing a suppurative process, the absorption of gaseous substances is as rapid as after hypodermic injection; the absorption of bacilli is also very rapid.—*Med. and Surg. Reporter*, June 1, 1889.

IV. The Removal of Stone from the Bladder through the Dilated Prostatic Urethra, Vesical Neck and a Perineal Incision. By Dr. LAPLACE (New Orleans). The author relates the case of a weakly man, æt. 56 years, in whose bladder a calculus about the size of a chestnut was found by exploration. A perineal section was made upon a guide in the urethra and the incision, $1\frac{1}{2}$ inches in length, was continued within a quarter of an inch of the prostate. The guide was then withdrawn and the prostatic urethra and the neck of the bladder dilated by the use of successive sizes of Simon's dilators, until two fingers could be passed into the bladder without difficulty. The stones were now readily located and removed. The external perineal wound was closed by two sutures placed at its extremities, and the case was thereafter treated as a simple external urethrotomy. The patient passed on to an uninterrupted recovery. The author concludes that: (1) The operation is very simple, little more really than an easy external urethrotomy. (2) The prostatic urethra may be dilated very greatly, with ease and with impunity. This is evident from the muscular structure of the prostate and from the great dilatation of which the uterus, which in the female corresponds to the prostate in the male, is capable. (3) Having now a safe means of access to the male bladder, free from danger to that viscus, there is no reason why we should not to a very great extent abandon the old methods of extracting calculi from the male bladder, and employ instead this method by which calculi of any size may be removed with or without crushing, avoiding the serious risks of the older operations. Foreign bodies may be removed with especial facility and safety from the urethra and bladder in this way.—*New Orleans Med. and Surg. Jour.* June, 1889.

V. Papillomatous Tumor of the Bladder Removed by Supra-Pubic Cystotomy. By HENRY O. MARCY (Boston). A man, æt. 62 years, of sedentary habits, in good health until August, 1887, when he noticed for a few days blood in urine which disappeared without treatment. He remained well until the following May, when the urine again became bloody, attended with rather frequent micturition and occasionally the passing of blood clots, otherwise well. During

the summer the urine continued bloody with a distinct deposit of blood on settling. This slowly increased in quantity, often attended with great difficulty of urination owing to the passage of large clots. Notwithstanding medical treatment he grew gradually worse, until, when first seen in November, he was distinctly anæmic, complained of some pain, attended with a frequent desire to micturate. The patient was above the average height, weight 140 pounds, abdominal wall thin, urine normal in quantity and of fair specific gravity, great increase of bladder epithelium, but no evidence of renal complication. The bladder is distensible, the sound gives no evidence of foreign body in bladder, although the hæmorrhage is much increased by the introduction of instrument. Careful bimanual examination with finger in rectum gives no indication of tumor, or thickened bladder wall. Prostate not enlarged, urethra of normal calibre. Irrigation by means of a double rubber catheter, with water at temperature 110°, continued for half an hour, causes no perceptible lessening in loss of blood. This was persisted in twice a day for nearly two weeks, the time of irrigation being gradually extended to even two hours. Although of no especial discomfort it is doubtful if any benefit resulted. It became clearly evident that the patient's life was in serious danger unless the hæmorrhage could be controlled, and although the diagnosis was doubtful, it seemed extremely probable that the hæmorrhage was due to a small papillomatous growth. While very desirous of examining the bladder with the cystoscope, at no time was the urine sufficiently free from blood to make it possible. December 6th, Dr. Marcy performed supra-pubic cystotomy. The bladder was distended with warm water and the penis compressed by a rubber bandage. After cutting down to the bladder, four stay ligatures of silk were introduced, between which an incision was made long enough to admit two fingers. With the escaping fluid there floated into the lips of the wound a villous tumor the size of a small egg. It was pedunculated, having its origin from the base of the bladder, the pedicle being about the size of the finger. This was ligated with catgut, applied with some difficulty, material aid being rendered by two fingers of the assistant within the rectum. The extreme softness and vascularity of the tumor caused

apprehension of danger from subsequent hæmorrhage, and consequently it was deemed wise to keep the wound in the bladder open. For this purpose and also to prevent extravasation of urine into the tissues, the bladder wall was stitched in continuous suture to the lips of the wound. Small sponges securely attached to strong ligatures were introduced into the bladder. The patient bore the operation well. The sponges were removed the second day and the urine remained free from blood. The bladder was daily irrigated with a very weak sublimate solution. Convalescence was speedily established. A compress and pad were worn over the abdominal wound and within three weeks nearly all the urine passed through the urethra. The wound slowly cicatrized, leaving a minute opening which finally became permanently closed in March.—*New England Medical Monthly*, 1889.

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